Architectural
Library

A 1934

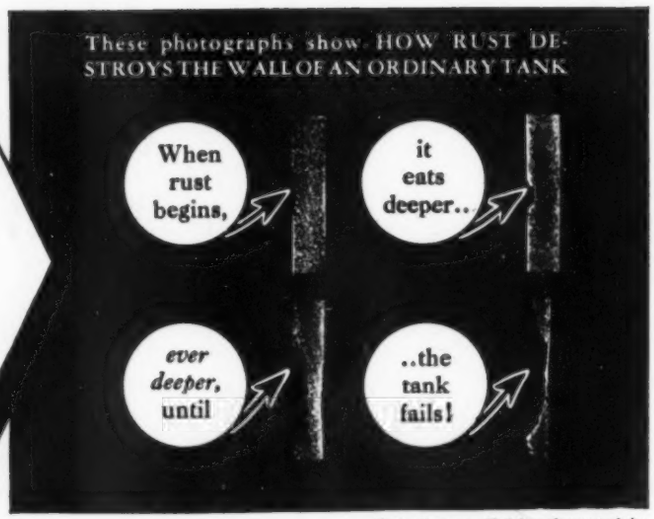
THE ARCHITECTURAL RECORD

1934

9

MORTGAGE LOANS FOR MODERNIZATION • SHOPS • MARKETS

THIS CAN *never* HAPPEN...


These photographs show HOW RUST DESTROYS THE WALL OF AN ORDINARY TANK
When rust begins,
it eats deeper..
ever deeper, until
..the tank fails!

Illustrations magnified three times actual size

IF THE TANK IS *rustless* EVERDUR

AN ever increasing number of buildings are overcoming rust troubles and their attendant expense with storage heaters of Everdur. In laundries, hospitals and textile mills, heaters of rustless Everdur were accepted readily. More recently, hotels, schools, apartments and office buildings have installed similar equipment. Not to mention residences, where thousands are enjoying rust-free hot water and trouble-free service from range boilers and heater storage tanks of welded Everdur.

Nearly all copper... Everdur is scientifically alloyed to provide the strength and welding properties of steel. And Everdur cannot *rust!* Thus this special Anaconda Metal possesses all the requirements for durable, rustless tanks. Qualified equipment manufacturers are prepared to quote on and furnish Everdur tanks and heaters to your specifications. And leading manufacturers of household automatic water heaters and range boilers now standardize on Everdur for *all* their rust-proof tanks.

Equally logical is the use of Everdur for many other applications. Among them: Air-conditioning equipment, masonry anchors, drains and ducts, electrical metallic tubing, smoke washers and window cleaner bolts. On request, we will gladly send information about the advantages of Everdur for any of these uses.

1140-gallon all-welded Whitlock Everdur Type-K Storage Heater, installed in University of California Medical Building, San Francisco.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Conn.
Offices and Agencies in Principal Cities

EVERDUR METAL
"Everdur" is a registered trade-mark identifying products of The American Brass Company made from alloys of copper, silicon and other elements.

ANACONDA
from mine to consumer

EVERDUR METAL *for* TANKS

M. A. MIKKELSEN
Editor
A. LAWRENCE KOCHER
Managing Editor
C. THEODORE LARSON
Technical News Editor

JOHN M. WILLIAMS
General Manager
J. A. OAKLEY
Business Manager
F. H. COMTOIS

ERNEST BORN
PRENTICE DUELL
HOWARD T. FISHER
ALBERT FREY
FISKE KIMBALL
WILLIAM STANLEY PARKER
Contributing Editors

THE ARCHITECTURAL RECORD

VOLUME 76 NUMBER 3 1934 SEPTEMBER

ILLUSTRATED NEWS — 145, 146

A STREET IN SENLIS, FRANCE
Drawing by Samuel Chamberlain — Frontispiece

THE ARCHITECT'S PARTICIPATION IN THE MODERNIZATION PROGRAM. — 149, 150

HOUSING SHORTAGES AND NEEDS FOR REPAIRS AND IMPROVEMENTS. By Thomas S. Holden, Vice President in Charge of Statistics and Research, F. W. Dodge Corporation — 151, 154

PORTFOLIO OF SMALL SHOPS
Lee Sacks, Inc., Chicago—Sobel and Drielsma, Architects • Sandal Room, Cutler Shoe Store, Chicago—Sobel and Drielsma, Architects • Palmer House Boot Shop, Chicago—Alteration by Sobel and Drielsma, Architects • Myer Siegel and Company Store, Los Angeles—Fiel and Hunter, Architects • Perfume Shop, Diana Court, Chicago—Designed by Anton Eichmeier • A Bakery, Winnetka, Illinois—Vance Wilkinson, Designer • Bullock's Men's Store, South Hill Street, Los Angeles—John Parkinson and Donald B. Parkinson, Architects • Palmer House Liquor Shop, Chicago—Holabird and Root, Architects • Davidson's Bakery, Evanston, Illinois—Gordon S. Gundling, Designer • Howard Bake Shop, Chicago—Gordon S. Gundling, Designer • Albert's Delicatessen and Grill, Chicago—Gordon S. Gundling, Designer • Blue Danube Grill, Chicago—Gordon S. Gundling, Designer • Studio and Show Room of Russell Wright, New York City—Russell Wright, Designer • Showroom and Office for A. H. Jejizian, New York City—Designed by Zareh M. Sourian • Lawrence C. Gumbinner Advertising Agency, New York—Eleanor Lemaire, Designer • Office Lobby of Marschalk and Pratt, Inc., New York City • A Show Room, New York City—Howe and Lescaze, Architects — 155-179

BRILL BROTHERS STORE, NEW YORK CITY. Shreve, Lamb and Harmon, Architects — 180-182

PLANNING A SMALL MEN'S SHOP. By Kenneth C. Welch, A.I.A., and Vice President, Grand Rapids Store Equipment Company — 183-187

STORE MODERNIZATION (A check list) — 188-190

LAUXMONT DAIRY, WRIGHTSVILLE, PENNSYLVANIA. Delano and Aldrich, Architects. Article by Eugene Clute — 191-198

THE WHOLESALE PRODUCE MARKET. By Wells A. Sherman, Specialist in Charge of Fruit and Vegetable Division, U. S. Bureau of Agricultural Economics — 199-203

BIG BEAR SHOPPING CENTER, PATERSON, NEW JERSEY. B. Sumner Gruzen, Architect — 204, 205

THRIFTY MART, LOS ANGELES, CALIFORNIA. Morgan, Walls and Clements, Architects — 206

TECHNICAL NEWS AND RESEARCH:
THE LIGHTING OF SMALL STORES. By Henry L. Logan — 207-215

BUILDING TRENDS AND OUTLOOK. By L. Seth Schnitman, Chief Statistician, F. W. Dodge Corporation — 216

THE ARCHITECT'S LIBRARY — 21, 22 (adv.)

13, 14 (adv.)

Published monthly by F. W. DODGE CORPORATION, 115-119 West 40th Street, New York. Truman S. Morgan, President; Sanford D. Stockton, Jr., Secretary; Howard J. Barringer, Treasurer. Yearly subscription: United States and Possessions, $3.00; Canada and Foreign, $5.00; Single Copy, 50c. Member Audit Bureau of Circulations and Associated Business Papers, Incorporated. Copyright, 1934, by F. W. Dodge Corporation. All rights reserved. Entered as second class matter May 22, 1902, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Printed in U.S.A.

Another neat stucco job

with stucco of Atlas White

There's one thing about white portland cement stucco—you can get just the right color to fit the structural and architectural design and to bring out the full beauty of the texture used. On this Los Angeles office and factory building, architect John M. Cooper wanted a clean, light, smooth exterior finish—neat and business-like. Using *Eclipse Stucco*, a prepared stucco (which is preferable), plastering contractor Howard A. Booher did the job pictured above.

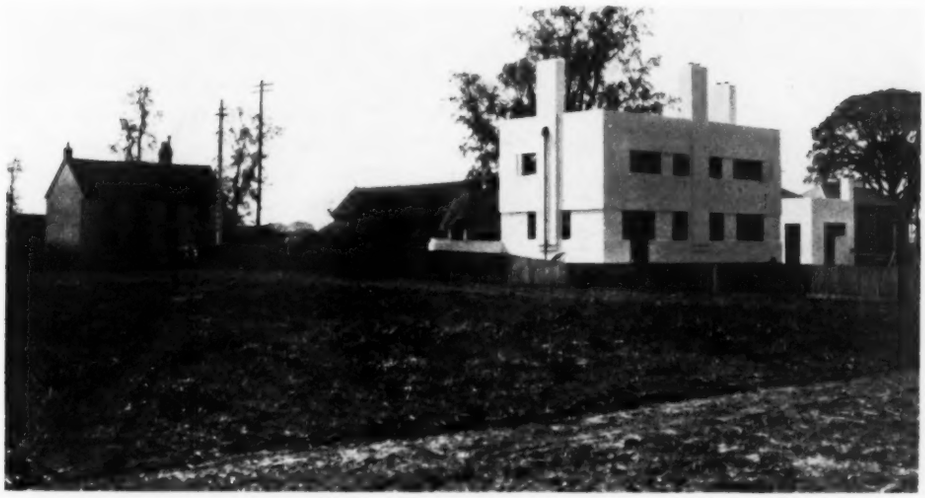
We haven't seen any glowing testimonials, but from the looks of it, it's our bet that this job was most satisfactory. We're proud to say that it's another good stucco job made with Atlas White. If you would like detailed information on this kind of good stucco, we'll be glad to send it promptly. Write Universal Atlas Cement Co., *Subsidiary of United States Steel Corporation*, 208 South La Salle Street, Chicago.

177

ATLAS WHITE PORTLAND CEMENT

PLAIN OR WATERPROOFED

THE ARCHITECT'S LIBRARY



HOUSE FOR R. M. SMITH, REAR VIEW—SILVER END DEVELOPMENT, ENGLAND
SIR JOHN BURNET AND PARTNERS, ARCHITECTS

THE MODERN HOUSE. *By F. R. S. Yorke. The Architectural Press, London. Copies may be obtained from The Architectural Record at* $6.

In view of the extensive and increasing interest in the modern house it is fortunate that the first book on the subject in England has appeared that is at once complete in illustration and understandable and sound in text discussion. It has been characterized as "a memorable book which liberates architecture from its narrower self, and shows us the modern house as the technical product it really is against a background of the crystallizing discoveries and resultant complications of modern life." It is a book which discusses the house from the point of view of needs in planning rooms and shaping the space and volume of the house. Today the house plan is based on intensive organization of space units and equipment, and "the problem," says Yorke, "is further changed because convenient, well-planned houses are no longer within the reach of the very rich alone."

HOUSE OF J. VAN DER LEEUW,
ROTTERDAM, HOLLAND
J. A. BRINKMAN AND L. C. VAN DER VLUGT,
ARCHITECTS

New materials and revolutionary systems of construction based upon their properties make it possible for the architect to effectively enclose and insulate the house interior; with most scientific methods, he can span immense openings or adopt slender supports or cantilever his facades with both economy and freedom. "It is absurd," says the author, "to impose upon the new materials, that are essentially light, the classic forms that are essentially heavy. It is equally absurd that a steel structure should be clothed in stone so that it looks like a structure of mass masonry, or that the concrete house, which, but for expansion joints, is a monolith, should have joints scribed upon its surface so that it appears as a pile of small blocks.

"The principal elements of the facade are the wall and window. The use of the frame and the application of the cantilever principle make possible the provision of windows of unlimited length, uninterrupted by vertical supports; not only the plan but the facade is free, and any part, or the whole of it may be of glass; the windows can extend from floor to ceiling and along the whole length of the room, and curtains can be employed to control light intensity. A maximum sunlight period is obtainable and full advantage can be taken of the view in any direction.

"In earlier times sunlight was regarded as harmful rather than beneficial; it was considered a stimulant to the growth of bacteria and windows were made small deliberately and placed away from the sunny side. It did not occur to the people that the effect of the sun upon garbage, and not upon their bodies or their rooms, was the real cause of the mischief. Through medical research, we have learned

better, and today sunlight is accepted as healthful and desirable. But architects," continues the author, "find it difficult to reconcile large glass areas with the types of facade that were designed about small ones, and they employ heavy mullions and transoms and ridiculous little panes in a half-hearted attempt to 'keep the scale.'"

This illuminating book by Mr. Yorke is written for American readers as well as for architects and the public of England, France, and other countries. There are as many examples illustrated from the United States as from England. The book is so divided as to present the current participation of the many countries in the world-wide movement to improve the house. The advance of industrialized building materials in America favors progress here in the construction of the modern house.

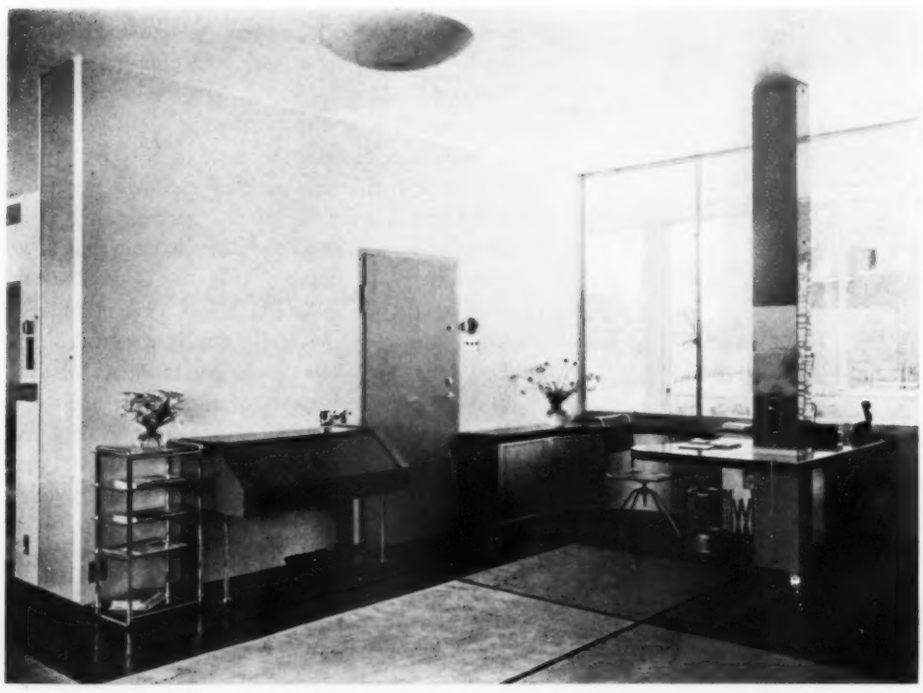
A chapter of the book is devoted to the design and construction of the prefabricated and experimental house. It is decidedly a book for students of architecture and draftsmen as well as for the layman.

THE ECONOMICS OF SHELTER. *By Arthur Farwell Bemis. Technology Press, Massachusetts Institute of Technology, Cambridge, Mass.* 598 *pages. Illustrated.* $4.

This is the second of three volumes to appear under the general title of "The Evolving House": the first, "A History of the Home," was published in 1933. There is a thorough-going compilation of data on the economic importance of housing, the annual cost of shelter, organization and relative efficiency of the building industry, home-financing, building costs, and European Government aid to housing.

The material is very well organized and includes much valuable reference information. Due possibly to the author's great interest in the potentialities of the prefabricated house, there is in evidence some tendency to minimize the importance of land and financing costs and thus over-emphasize somewhat the relative importance of construction costs.

On the whole the book couples an unusually broad range of factual data with very competent analysis and interpretation; a real addition to any library on the subject of housing.



INTERIOR, HOUSE OF J. VAN DER LEEUW, ROTTERDAM, HOLLAND
J. A. BRINKMAN AND L. C. VAN DER VLUGT, ARCHITECTS

CALENDAR OF EXHIBITIONS AND EVENTS

October 15-November 15	Low-cost housing exhibit at New York Museum of Modern Art.
November 1	Closing date of the 1934 Century of Progress Exposition in Chicago.
Until December	Remodeling Competition, conducted by the Good Housekeeping Studio, 57th Street and Eighth Avenue, New York City.
December 3-8	Eleventh National Power Exposition, at Grand Central Palace, New York City.

NEWS OF THE FIELD

Allen G. Siple architect, has moved his office to 450 North Beverly Drive, Beverly Hills, California.

Spencer J. Warwick, architect, has moved from 84 Thornton Avenue to 100 East Rayen Avenue, Youngstown, Ohio.

Sam B. Goldman, architect, has changed his address from 821 Westgate to 738 Syracuse Street, University City, Missouri.

Edward Fleagle, architect, announces the opening of an office for the practice of architecture at 18 South Broadway, Yonkers, New York.

The Bourke-White Studio has been moved from the Chrysler Building to 521 Fifth Avenue, New York City.

John Kevan Peebles, architect, died on July 31. He was the senior member of the architectural firm of Peebles and Ferguson, Norfolk, Virginia.

The award of the Carnegie Research Fellowship and the Undergraduate Scholarship in city planning to students in the department of architecture at the Massachusetts Institute of Technology has been announced by Dean William Emerson. The Carnegie award, carrying with it a stipend of $750, goes to Lawrence E. Hovik of Minneapolis, Minnesota, while the Undergraduate Scholarship of $500 has been awarded to John T. Howard of New Haven, Connecticut.

Good Housekeeping Studio announces that its Remodeling and Renovating Contest has been extended to June 30, 1935. This contest is open to amateurs, builders and architects. Booklet giving full details and an entry blank can be obtained from Good Housekeeping Bulletin Service, 57th Street and 8th Avenue, New York City.

Announcement has been made of the following prize-winners in the competition for a post office lobby design conducted by the Quarry Tile Industry: First prize, Vernon F. Duckett and Henry S. See, Washington, D. C.; Second prize, S. Thomas Stathes, Washington, D. C.; Third prize, Harry Francis Cunningham, Washington, D. C.; Honorable mention, H. L. Virnelson, Washington, D. C., Edmund W. Malczewski and Dan W. Twiddy, Washington, D. C., Vernon F. Duckett and Henry S. See, Washington, D. C.; Mention, L. C. Page, Jr., Austin, Texas; Oran Jenkins, Stinson Beach, Marin County, California.

The Architectural Society of Western Massachusetts has been formed with headquarters at 22 Dwight Street, Springfield, Massachusetts. Harry M. Seabury is president and Henry J. Tessier, secretary-treasurer.

Ralph T. Walker of the firm of Voorhees, Gmelin and Walker, architects, has been reelected president of the New York Chapter of the American Institute of Architects for the year 1934-35. Eric Kebbon remains secretary and Daniel P. Higgins continues as treasurer of the organization.

M. W. Kleinman of New York University, a pupil of Lloyd Morgan, was the winner of the National Competition for the 27th Paris Prize of the Society of Beaux-Arts Architects. The subject of the competition was the design of an international athletic center.

Appointment of Francis P. Sullivan of Washington as chairman of the Committee on the National Capital of the American Institute of Architects is announced by Ernest J. Russell, president of the Institute. Mr. Sullivan, a native of Washington, is a former president of the Washington Chapter of the Institute.

The New School for Social Research, 66 West 12th Street, New York City, will offer in the fall term two courses dealing with the rehabilitation of congested urban areas and the improvement of cities to conform with the new modes of transportation, communication, industry and living. Beginning Thursday, October 4, at 5:20 P. M., Dr. Werner Hegemann will give a series of fifteen illustrated lectures on The Replanning of Old Cities dealing with liquidation of land values and large investments; slums and congestion; planning of new decentralized areas with the advantages of both city and country; industrial and agricultural life. Abraham Goldfeld, executive director of the Fred. L. Lavanburg Foundation and vice president of the Housing Section of the Welfare Council of New York, will conduct a field course on the social aspects of housing on Saturday afternoons at 2, beginning October 6. The object of the course is to study at first hand the existing housing conditions in New York. Visits will be made to the Lower East Side tenement districts and to improved housing developments in the metropolitan area.

IN THIS ISSUE

Modernization for the Architect

The main ideas incorporated in the modernization program are discussed as the editorial of this issue. It answers the questions uppermost in the mind of architects, namely, "How can the architect participate in the National Modernization Program?"

The housing survey of 64 cities now completed by the Bureau of Foreign and Domestic Commerce is reviewed by Thomas S. Holden.

Portfolio of selected examples of store remodeling—a most frequent building type, outside the housing field, subjected to modernization.

Technical News and Research. Principles of Store Lighting. By Henry L. Logan.

NEXT MONTH

The Architectural Record has prepared a schedule of alteration and modernization items intended to serve as a complete reference guide to architects in modernization of the house. It is specifically intended to aid those seeking house improvement with mortgage help under the National Housing Act which authorizes loans for modernization up to $2,000. This check list is illustrated with plan-change possibilities, equipment items to add to convenience, photographic views of changes that can be made at nominal cost.

Portfolio of modernized houses, with "before and after" views; new houses of low cost.

Planning the Kitchen. By Dr. Louise Stanley, Chief, Bureau of Home Economics, Department of Agriculture, Washington.

Van Anda

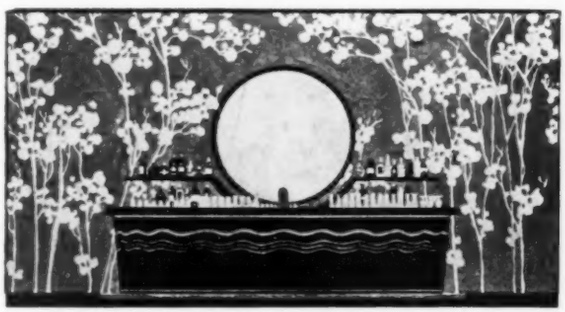
Moser Residence, Kent, Connecticut. Allan McDowell, Designer.

Example of a modernized house (made over from a barn), Greenwich, Conn. Edward Mainwaring-Johnson, architect

ILLUSTRATED NEWS

Keystone

FIRST PWA HOUSING PROJECT. With $84,000 loaned by the Public Works Administration, the first project completed under the housing and slum clearance provisions of the National Industrial Recovery Act has resulted in making available a group of small bungalows in Alta Vista, Virginia. The project was promoted by a limited dividend corporation. Rental Schedules vary from $16 to $20 a month, the higher rentals being asked for houses situated on corner lots.

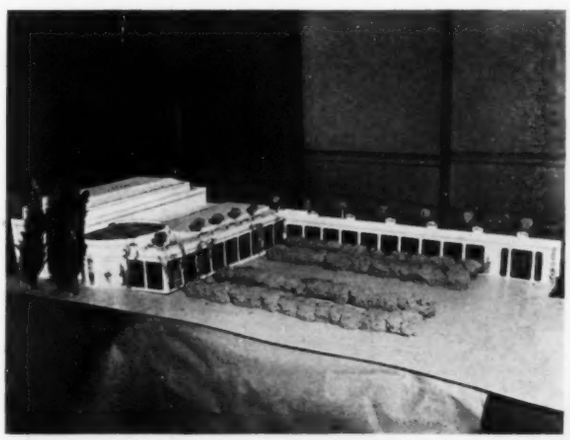


A PRIZE-WINNING DESIGN in a nation-wide competition for new ideas for bar design. Donald M. Douglas, winner of first prize for service bar.

JURY FOR BAR DESIGN AWARDS. Left to right: Harvey Wiley Corbett, Benjamin Marshall, John Holabird, Ernest Byfield, Karl Eitel, Ralph T. Walker and Robert F. Bensinger, president of the Brunswick-Balke-Collender Company which provided the prizes for the contest and which will manufacture bars from the winning designs.

Galloway

NEW ELEVATED TRACKS of N. Y. Central Railroad in lower west side warehouse district of New York City. This is a view of the tracks where they run through a terminal warehouse at 10th Street and 8th Avenue, Manhattan.



Keystone

ADDITION TO THE WHITE HOUSE. Contracts were recently awarded for the construction of an addition to the White House at a cost of $303,087. Eric Gugler, architect, is in charge of alterations. Space is utilized that had been used as a clothes-drying yard and it will not conflict with the form of the executive mansion. The enclosed porch at rear will look out upon formal gardens.

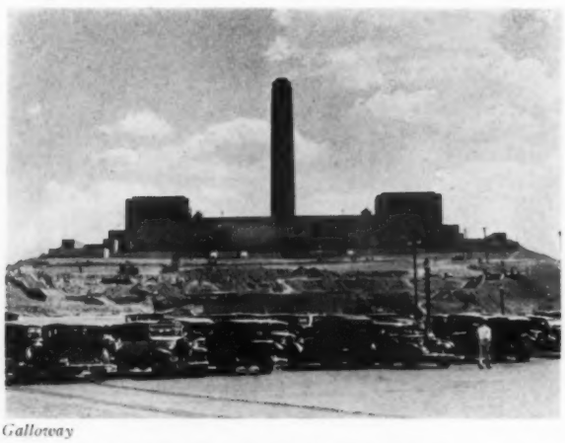
Llewellyn Thomas

DISPLAY ROOM OF CHICAGO WORKSHOPS.

"Chicago Workshops" is a group of architects and craftsmen who are designing furniture and interiors. Selection and approval of designs are based upon present-day requirements arising from new social and economic conditions. At present the products of the group are custom-made by the small craftsmen, but they are designed and made so as to be adaptable for quantity production later. Orders are taken for the objects when they are shown in their display rooms; special commissions also are filled. Their selling methods at present have been through furnishing houses at exhibits and with cooperation of manufacturers. Another important problem under consideration by Chicago Workshops is that of home planning. There is a growing realization that the real home of today must be in accordance with our life and habits, and that the "period" craze of the last decades has no place in our present-day living. One fact has not yet been sufficiently emphasized; that is the necessity for making the house a unit in its exterior and interior. The house develops as an organic growth, the furniture simply follows and completes the architect's plans for the needs of the occupant. Furnishings should organize space, not decorate it. Chicago Workshops has endeavored to show these principles in planning the Crystal House and the General Houses Exhibition House at A Century of Progress, Chicago.

NEUTRA TO DESIGN EXPERIMENTAL SCHOOL. Richard Neutra, architect of Los Angeles, has been designated as architect for an experimental public school at Corona, California. The building suggested for the school is one-story, having as its chief difference from the ordinary structure, an outdoor classroom adjoining each indoor room. The outdoor classroom opens up into a central patio.

CASEIN PAINT. The widespread use of casein paint on the interior and exterior of the buildings at the Century of Progress Exposition has drawn attention to some unique properties inherent in this paint derived from milk. It was selected by the late Joseph Urban, after much experimentation, principally because of its very high reflectivity and also because of its ability to hold brilliance.



Galloway

KANSAS CITY MEMORIAL TO BE COMPLETED. C. W. A. workers have been improving the grounds around the Kansas City Memorial. Workmen have graded the ground, sodded the plot and are building a stone wall at the border of the park. H. Van Buren Magonigle was architect for the building. Mrs. Magonigle was designer of a sculptural frieze that remains to be completed on main façade.

Galloway

BOULDER CITY NEAR COMPLETION. This modern desert town with a present population of 5,000 was built under the direction of the U. S. Bureau of Reclamation; S. R. De Boer, city planner. Houses occupied by workers and their families appear in the foreground. The town is the headquarters for the construction of the dam and power plant, and for the operation of the power plant and reservoir when completed.

A STREET IN SENLIS, FRANCE

DRAWING BY SAMUEL CHAMBERLAIN

VOL · 76 NUMBER 3

1 9 9 3 4

SEPTEMBER

THE

ARCHITECTURAL RECORD

Architects' Participation in The Modernization Program

Bulletin No. 1 of the Federal Housing Administration was released on August 10. It is entitled "Modernization Credit Plan: Information for National Banks, State Banks and Trust Companies; Industrial Banks; Finance Companies." This initial bulletin has been distributed to all institutions permitted by law to make loans on notes without mortgage security and to purchase such notes. Bulletin No. 2 supplies corresponding information for building and loan associations, savings banks, insurance companies and similar institutions which are required to loan against mortgage security. Other publications explaining phases of the modernization program are promised, including an illustrated booklet, "How Owners of Homes and Business Property Can Secure the Benefit of the National Housing Act," which explains the financing plan and suggests desirable work to be done.

The publications are placed on file with the chapters of the American Institute of Architects and with the state societies of architects as they appear. The organization and procedure of the Housing Administration will have been perfected before this issue of The Record appears. The Institute is cooperating with the Administrator at his request, and is in a position to give to its chapters the earliest possible authentic information as to opportunities for architects as private practitioners in

connection with the modernization program. In the meantime, it has urged all chapters to develop collaborative plans adapted to local conditions for promoting the program and furthering the use of architectural services. One collaborative plan contemplates the repair of a group of school buildings; another, the modernization of several block fronts of retail stores; others, the improvement of groups of dwellings. Where more than one owner is concerned, each property is dealt with according to its own requirements under a separate contract, but the total of the contracts is large enough to warrant expert service in design, supervision and contract letting. Architects who have private work in view will do well to call in person at the various lending institutions in their communities.

Two questions certain to be raised by prospective clients for modernization work are: Is credit available? Are prices and wages favorable?

The first is answered by Bulletin No. 1 as follows: "To date, adequate credit has been lacking. First, the liquid assets of property owners in general have been depleted. They, therefore, have been unable to provide collateral which would safeguard our banks and other financial institutions in extending them credit. Second, the current incomes of many property owners, while better assured than they were, may not be sufficiently assured to be accepted by financial institutions as a basis for credit in the absence of collateral. Third, unsecured personal loans, of adequate term for the purpose needed, even to bona fide property owners of highest integrity, have not provided sufficient liquidity to meet the proper requirements of good banking practice.

"The National Housing Act provides the means to bridge this gap. It enables financial institutions to make investments having the same degree of security and liquidity as is possessed by their best collateral loans."

As to prices and wages, no statement has at this writing been made by the Administrator. A reduction averaging 10 per cent has been announced by the Retail Lumber Dealers Code Authority in retail prices of lumber, lumber products and sundry other so-called housing items sold in retail yards to aid the modernization and home building plans contemplated in the Housing Act. Thus far no reductions are known to have been obtained from the Builders Supplies Trade Code Authority pertaining to fire-resistant supplies, such as cement, ceramic tile, common brick, gypsum products and the like. Nor do concessions appear to be forthcoming from the railroads in the matter of freight rates. In a few of the area codes applied for under the Construction Code labor proposes to accept a lower wage for repair work than for new construction.

In the absence of complete and final information concerning prices and wages, the safe procedure for architects is to confer with reliable contractors.

Meanwhile, it may be said that the announced concessions in building material prices noted above remove a good part of the disparity between this price group and the general (wholesale) price level. Before the concessions were made, a weighted combination of building material items at retail entering into home construction showed a decline of only 6 per cent below the average for 1926. With the announced cut in housing items the retail index is 16 per cent below 1926. The general price level is 25 per cent below the 1926 base, but the general price level will be to a marked degree influenced by the future trend of agricultural prices.

HOUSING SHORTAGES AND NEEDS FOR REPAIRS AND IMPROVEMENTS

By THOMAS S. HOLDEN

VICE-PRESIDENT IN CHARGE OF STATISTICS AND RESEARCH, F. W. DODGE CORPORATION . . . CHAIRMAN OF MAYOR LA GUARDIA'S ADVISORY COMMITTEE ON REAL PROPERTY INVENTORY OF NEW YORK CITY . . .

NECESSITY for the National Housing Act was emphatically demonstrated to the President and Congress by the housing shortages and needs for repairs and improvements reported in the real property inventories conducted early this year by the United States Department of Commerce. The present study is based on reports from fifty-seven of the cities surveyed. They include 1,656,624 family dwelling units and therefore represent approximately 5 per cent of the country's total, giving a fair sample of housing conditions throughout the nation. The figures are, however, still subject to some correction after seven additional cities have been reported by the Commerce Department and after the New York inventory is reported by the New York City Housing Authority. For a complete picture of housing conditions in the United States, there should be added not only the statistics for these eight additional cities, but also the results of the farm housing survey conducted by the United States Department of Agriculture, on which a preliminary report was published in the April, 1934, issue of THE ARCHITECTURAL RECORD.

HOUSING SHORTAGES

Definite housing shortages exist in thirty of the fifty-seven cities, as shown in Table I. Each city listed in Group A has more families than dwelling units, irrespective of fitness of the dwelling units for habitation. In the thirty cities as a group there are 21,070 more families than dwelling units. Each of the Group B cities, seven in number, has a small excess of family units over families, but the number of surplus units is in each case less than the number of dwelling structures rated as unfit for use. The twenty cities in Group C each have more fit dwelling units than families, but in most cases only a moderate surplus; potential demands for certain types of dwellings may conceivably exist in the cities of this group, even though undisclosed in the statistical report.

In the list of fifty-seven cities as a whole the number of structures rated as unfit for use amounts to only 2.3 per cent of the total number of structures, indicating that the investigators were conservative in applying that rating. The reports do not disclose the numbers of dwelling units included in the unfit structures.

On the basis of these figures we may conservatively assume a total shortage of 30,000 units, which would allow for replacement of something less than half the unfit dwellings in the Group A and Group B cities. If this figure may be assumed as typical of the entire country, a shortage of 600,000 dwelling units is arrived at, as a quite conservative estimate. As will be explained later, the immediate potential demand is probably some fraction of this figure. Various authorities have estimated the shortage at 635,000 units, 800,000 units and 1,000,000 units. The last figure seems somewhat excessive. The definite figure is relatively unimportant. The number of people with the money and the desire to build is the determining factor.

TABLE I—
NEW HOUSING NEEDS IN 57 CITIES

	GROUP A 30 cities, each having more families than dwelling units	GROUP B 7 cities, each with surplus dwelling units, but surplus units fewer than unfit structures	GROUP C 20 cities, each having more fit dwelling units than families
Number of existing units	728,673	239,561	688,390
Number of vacant units	42,154	20,669	61,299
Number of occupied units	686,519	218,892	627,091
Number of extra families doubled up	63,224	18,723	33,541
Total families	749,743	237,615	660,632
Excess families over units	21,070	.....	.....
Excess units over families	.....	1,946	27,758
Number of structures unfit for use (Containing an unknown number of dwelling units).	14,582	6,374	8,670

TABLE II—NEEDS FOR HOUSING REPAIRS IN 57 CITIES

Class	Number of cities	Median family rental or equivalent	Number of structures	Needing minor repairs	Needing structural repairs	Unfit for use
I	2	$30.00 up	48,718	45.3%	9.2%	1.1%
II	6	$27.00 - $29.99	98,839	42.6	11.1	1.5
III	11	24.00 - 26.99	253,103	43.9	13.3	1.5
IV	14	21.00 - 23.99	456,256	43.5	16.7	2.1
V	7	18.00 - 20.99	85,809	47.6	18.0	2.5
VI	9	15.00 - 17.99	169,599	46.7	19.6	3.3
VII	8	under $15.00	170,537	41.1	22.8	3.6
Totals	57	.....	1,282,861	44.7%	16.6%	2.3%

TABLE III—NEEDS FOR HOUSING IMPROVEMENTS IN 57 CITIES

Class	Number of dwelling units	Units without gas or electricity		Units without plumbing facilities			Units without central heating
		For lighting	For cooking	Running water	Water closets	Tubs or showers	
I	72,651	2.0%	9.4%	2.8%	8.3%	13.9%	15.9%
II	143,574	4.3	20.7	4.5	14.6	20.0	27.2
III	347,210	2.8	17.9	5.1	11.6	17.3	51.4
IV	579,859	7.3	32.2	7.7	18.0	19.8	56.1
V	106,247	8.3	26.4	10.0	19.9	25.8	56.6
VI	199,092	21.2	43.1	15.8	29.5	38.8	79.6
VII	207,991	32.1	57.2	16.4	36.1	48.2	83.9
57 cities	1,656,624	10.7%	31.3%	8.9%	19.7%	25.3%	60.5%
25 Northern cities	796,033	2.8%	24.9%	4.5%	12.0%	17.5%	33.4%
32 Southern cities	860,591	18.0%	37.2%	13.0%	26.8%	32.5%	79.0%

TABLE IV—ALTERATIONS AND IMPROVEMENTS IN PAST 18 MONTHS
as recorded by F. W. Dodge Corporation for 37 Eastern States

(For rough approximation for the entire country add 20 per cent to figures here shown—the Western area has maintained a relatively better building volume than the East in recent years.)

Class of structures	First half 1933	Second half 1933	First half 1934	Eighteen months	Per cent planned by architects	REMARKS
Commercial and industrial buildings	$44,081,800	$53,110,300	$61,579,700	$158,771,800	44.0%	Income property
Public and institutional buildings, etc.	13,204,700	39,214,800	58,908,100	111,327,600	58.1	Partly financed by PWA
NON-RESIDENTIAL BUILDINGS	$57,286,500	$92,325,100	$120,487,800	$270,099,400	49.8%	
Apartments, hotels, etc.	$8,282,300	$7,507,900	$9,635,900	$25,426,100	64.3%	Income property
Rent houses, 1 and 2-family	1,948,500	1,721,300	1,890,400	5,560,200	25.4	Income property
Owner-occupied homes*	10,418,300	10,118,100	17,686,600	38,223,000	40.7	Partly financed by HOLC
RESIDENTIAL BUILDINGS	$20,649,100	$19,347,300	$29,212,900	$69,209,300	48.1%	
Public works	$3,000,700	$12,709,500	$40,102,800	$55,813,000	0.7%	Largely financed by PWA
Public utilities	3,395,400	10,418,100	10,603,600	24,417,100	13.2%	Partly financed by PWA
ENGINEERING STRUCTURES	$6,396,100	$23,127,600	$50,706,400	$80,230,100	.....	
All classes	$84,331,700	$134,800,000	$200,407,100	$419,538,800	.....	

*Includes half of the 2-family houses

CLASSIFICATION OF CITIES IN TABLES II AND III (ACCORDING TO MEDIAN FAMILY RENTAL OR EQUIVALENT)

Class I.—Fargo, N. D.; Syracuse, N. Y.

Class II.—Binghamton, N. Y.; Reno, Nev.; Burlington, Vt.; Trenton, N. J.; Portland, Me.; Peoria, Ill.

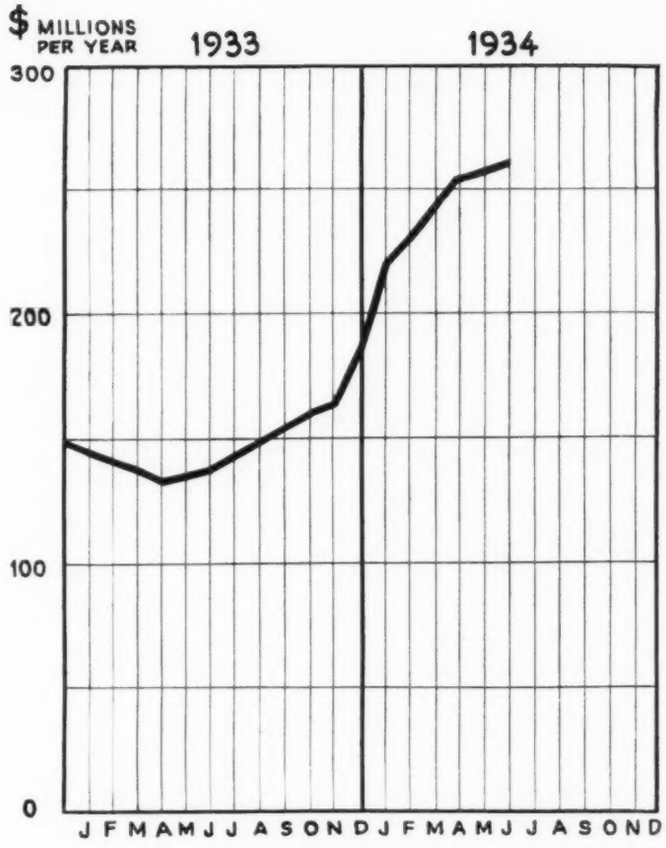
Class III.—Sioux Falls, S. D.; Erie, Pa.; Kenosha, Wis.; Lincoln, Neb.; Racine, Wis.; Worcester, Mass.; Waterbury, Conn.; Sacramento, Calif.; San Diego, Calif.; Santa Fe, N. M.; Des Moines, Iowa.

Class IV.—Williamsport, Pa.; Boise, Idaho; Lansing, Mich.; Albuquerque, N. M.; Richmond, Va.; Nashua, N. H.; Topeka, Kan.; Seattle, Wash.; Salt Lake City, Utah; Dallas, Tex.; Austin, Tex.; Oklahoma City, Okla.; Frederick, Md.; Portland, Ore.

Class V.—Decatur, Ill.; Baton Rouge, La.; Hagerstown, Md.; Phoenix, Ariz.; St. Joseph, Mo.; Wichita, Kan.; Casper, Wyo.

Class VI.—Wheeling, W. Va.; Zanesville, Ohio; Greensboro, N. C.; Butte, Mont.; Springfield, Mo.; Jacksonville, Fla.; Shreveport, La.; Little Rock, Ark.; Asheville, N. C.

Class VII.—Knoxville, Tenn.; Jackson, Miss.; Columbia, S. C.; Pueblo, Colo.; Wichita Falls, Tex.; Charleston, S. C.; Paducah, Ky.; Birmingham, Ala.



REPAIRS, ALTERATIONS AND MODERNIZATION WORK ALL CLASSES OF BUILDINGS—37 EASTERN STATES
(12 months moving totals)

THE NEED FOR HOUSING REPAIRS

In Tables II and III the fifty-seven cities are grouped into seven classes in accordance with the median family rentals or rental equivalents, this median rental figure being in all probability the best single index of the prevailing housing standards of the several communities.

The need for minor repairs is fairly uniform throughout the list of cities and averages 45 per cent of the dwelling structures. If this percentage applies to all the residential buildings of the country, the need for repairs is something enormous, and the potential demand is considerable.

Structural repairs are needed by one out of every six residential buildings in the entire list. However, in this case, only 9 per cent of the buildings in the Class I cities need structural repairs, and nearly 23 per cent of the buildings in Class VII need them. The need is much greater in the low-standard, low-rent communities, and the gradation is uniform down the seven classifications. A similar gradation occurs in the rating of structures as unfit for use. Obviously the potential demand for structural repairs is apt to be a small fraction of the need indicated in the statistics.

IMPROVEMENTS NEEDED

Many housing units need enlargement. In the fifty-seven cities there were 265,500 units reported as crowded or overcrowded (having more than one person to a room). Since this is greatly in excess of the number of extra families reported as doubled up (115,488) the indication is that about 9 per cent of the existing units need to be enlarged by one room or more, provided, of course, the families can afford additional space. Apparently, only a fraction of the overcrowded families might expand their living quarters, since the percentage of overcrowding is much the greatest in the low-rent communities.

The lack of standard housing conveniences is shown in Table III. Dwelling units without gas or electricity for lighting are 10.7 per cent of the total; without gas or electricity for cooking, 31.3 per cent; without running water, 8.9 per cent; without private indoor water-closets, 19.7 per cent; without tubs or showers 25.3 per cent; without central heating, 60.5 per cent. The tables clearly show, with respect to all these needed facilities, a definite gradation of needs as between the low-rent and the high-rent communities and also as between northern and southern cities.

There should be something of a market for these facilities among the families not now enjoying them. Perhaps an even greater potential market exists among families now enjoying comforts and luxuries and now able to replace outworn equipment or to acquire additional facilities. Less than 6 per cent of the dwelling

units have two or more indoor water-closets; just over 3 per cent have two or more bath tubs or showers; less than 17 per cent have mechanical refrigeration.

GARAGES AND AUTOMOBILES

Sixty per cent of the residential structures are reported as having garages. These 763,185 garages have a capacity for housing 1,057,510 cars, and 846,478 cars are owned. Garage vacancies thus indicated represent space for 221,032 cars, against housing vacancies (in fit and unfit units) representing accommodations for 124,122 families. This seems to indicate a restricted demand for new garage facilities and possibly a quite considerable demand for new cars. It suggests that among those families who have the wherewithal for major purchases, the claims of new cars may compete strongly with those of housing improvements in decisions about their expenditures. With the new financing terms to be offered under the Housing Act, the automobile will at least no longer enjoy the sales advantage of easier credit.

ESTIMATES OF BUILDING VOLUME IN NEW HOUSING AND REMODELING

It is a very easy matter to estimate housing, repair and improvement needs in terms of many billions of dollars. It is obvious, however, that any actual potential demand is some fractional part of such an estimate of needs. The facts of recent activity in these lines are very pertinent to the situation, and should be carefully examined. Table IV gives the record for alteration and modernization work done in the past eighteen months

This table brings out a number of highly significant facts:

1. Alteration and modernization work has amounted to about 20 per cent of all construction.

2. There has been and is a continuous upward trend in this class of work.

3. Income property of all kinds has been a better prospect for improvement than owner-occupied property. Improvement of rent-property tends to enhance the revenue from the property; improvements on owner-occupied property come out of the owner's income (present and future). Fortunately, the National Housing Act, as finally passed, provides for insuring modernization loans on all classes of real property.

4. In nonresidential and residential building improvements, architects' plans and specifications have accounted for half the total dollar volume. As in the case of new building work, architects have been responsible for the larger projects. They may handle an even larger proportion of modernization work developed in the national campaign.

The National Modernization Program is to be effective to December 31, 1935, or during the eighteen months following the period covered in the Table. Its effect will be much stronger next spring than this fall. It would seem easily possible that the stimulation of financing and a promotional campaign would in the next eighteen months double the volume of the past eighteen months; that would be a conservative estimate of results. To produce $1,500,000,000 in repair and modernization work in these eighteen months, as estimated by the Administration, would require that the volume of the past eighteen months be trebled. While this is a very high rate of increase, it may be possible of attainment.

NEW HOUSING

Whether the present shortage is estimated at 600,000 or 800,000 dwelling units, the amount of new housing to be constructed in the next eighteen months is likely to represent a gradual increase over the current rate of construction. This writer estimates that 48,000 new family units were built in the entire country in 1933; and that 20,000 units were started in the first half of this year. (While this is a decline in units, the total dollar volume for new housing is running somewhat higher this year.) This makes a total of 68,000 units in the past eighteen months. The machinery for new financing under the National Housing Act will not be put into operation until after the modernization campaign is under way, which means that increased new home-building will come mainly next year. The outlook for a substantial increase in 1935 is very good, and it is anybody's guess as to what that increase may amount to; it will depend largely on the rate of increase of national income and improvement of confidence in the future, as well as on the very advantageous new mortgage-credit facilities. It will also depend largely on whether speculative builders come into the market in any considerable degree. If 100,000 new dwelling units are built next year, which seems possible, that would more than double this year's volume and be a very welcome increase. The writer does not know at this time whether that is a conservative or an optimistic estimate; it may serve as a useful figure for business-planning at this time, subject to check and revision as the trends become definite.

CONCLUSION

The outlook for substantially increased volume of repair and modernization work and for new residential building under the admirable and timely National Housing Act is good, though the results will be felt to a moderate extent in 1934 and to a much greater extent in 1935. The Act will probably not accomplish much toward raising the general housing standards of low-income groups, whose needs for space and facilities are greatest. This is at present the responsibility of the Housing Division of the Public Works Administration, whose accomplishments to date have not been considerable. Nor is the Housing Act alone likely to bring about full recovery of the construction industry, general business or the national income. It is this writer's opinion that the one means now visible which can accomplish these larger purposes is a national public works program bigger than any we have yet had. The recommendations of the National Planning Board, to be laid before the President in the coming fall, will be awaited with much interest. At some stage the American people will begin to see clearly the economic absurdity of pauperizing American families and hamstringing prosperity by putting unemployed people on relief, when the manpower, technology, materials and credit resources exist to put every able worker on a real job improving the public and private living facilities of the people.

PORTFOLIO

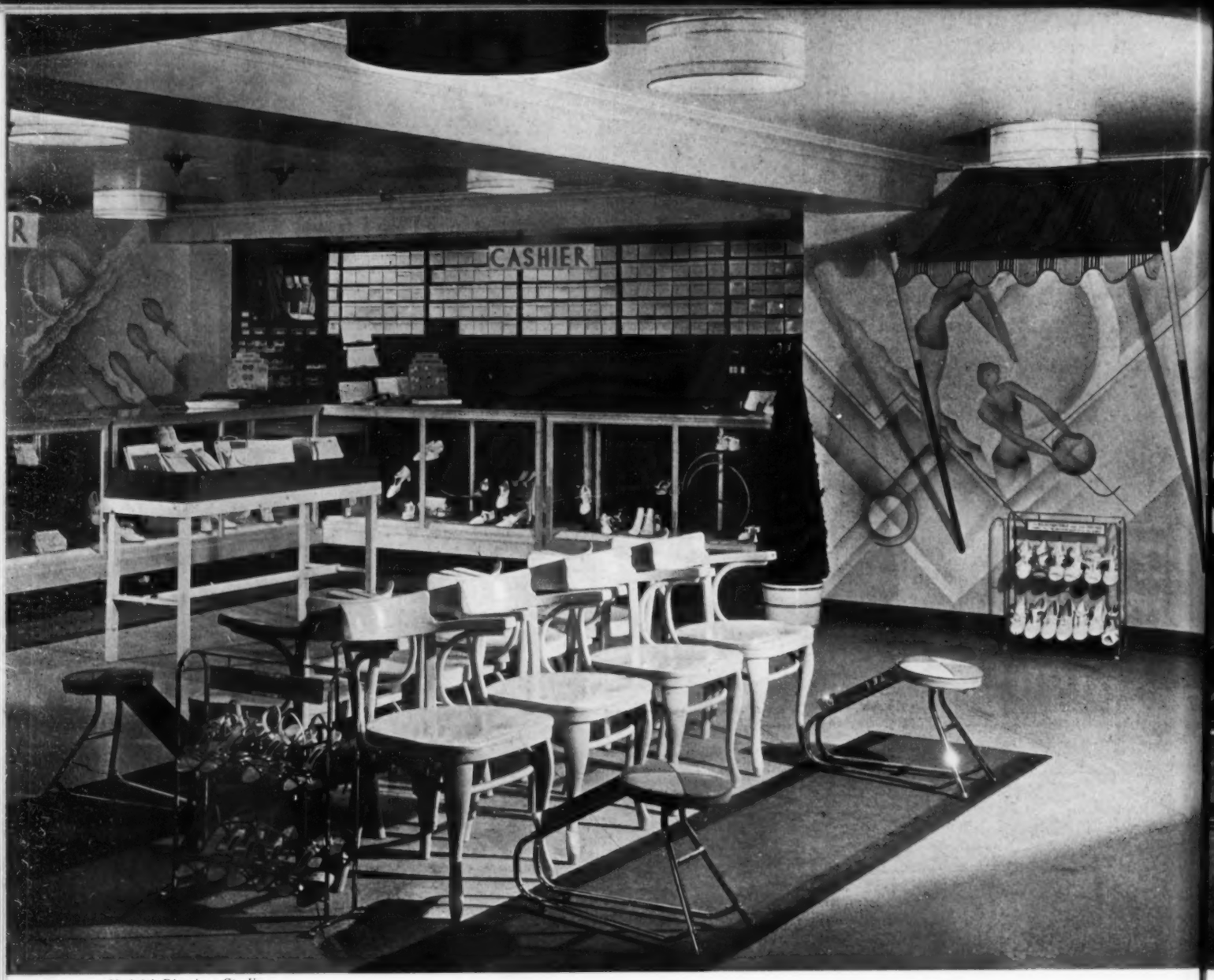
MODERNIZATION OF SMALL SHOPS

Hedrich-Blessing Studio

DRESS SHOP

ON NORTH MICHIGAN AVENUE, CHICAGO.
BASE AND OUTLINE FACING ARE OF BLACK GRANITE.
ALUMINUM IS USED FOR DOORS AND WINDOW FRAMES.
THE NAME IS SILHOUETTED WITH FORMICA IN FRONT OF GLASS WITH REFLECTORS BEHIND.

LEE SACKS, INC.—CHICAGO
SOBEL AND DRIELSMA, ARCHITECTS



Hedrich-Blessing Studio

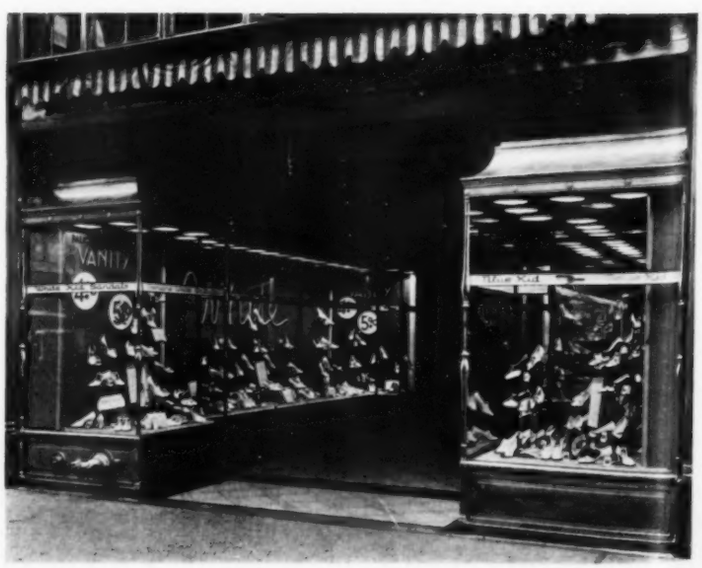
SANDAL ROOM, CUTLER SHOE STORE
STATE STREET, CHICAGO
SOBEL AND DRIELSMA, ARCHITECTS

A WASTED BASEMENT OF THE PALMER HOUSE SHOP WAS TRANSFORMED INTO A SALESROOM FOR SUMMER SHOES. WALLS ARE DECORATED WITH AIR BRUSH. DESIGNED AND EXECUTED BY HANNS R. TEICHERT. THE COLORS USED ARE BURNT ORANGE, LEMON YELLOW AND BURGUNDY RED. LEMON YELLOW CHAIRS REPEAT THE COLOR OF THE MURALS. THE FITTING STOOLS ARE CHROMIUM-PLATED TUBING WITH FABRICOID SEATS. THE LIGHTING FIXTURES ARE SHADED WITH PARCHMENT. THE AWNINGS ARE YELLOW, RED AND BLUE STRIPING.

Hedrich-Blessing Studio

UNNEEDED SPACE ABOVE THE TWO DISPLAY WINDOWS WAS UTILIZED TO ADVERTISE THE NAME OF THE STORE. A NEW METAL LATH AND PLASTER CEILING WAS ADDED ON A LEVEL WITH THE TOP OF WINDOWS. THE SILHOUETTED GLASS NAME PANEL IS LIGHTED WITH REFLECTORS. THE FACING OF THE FRONT IS OF CARRARA GLASS.

BEFORE ALTERATION



PALMER HOUSE BOOT SHOP
STATE STREET, CHICAGO
ALTERATION BY
SOBEL AND DRIELSMA, ARCHITECTS

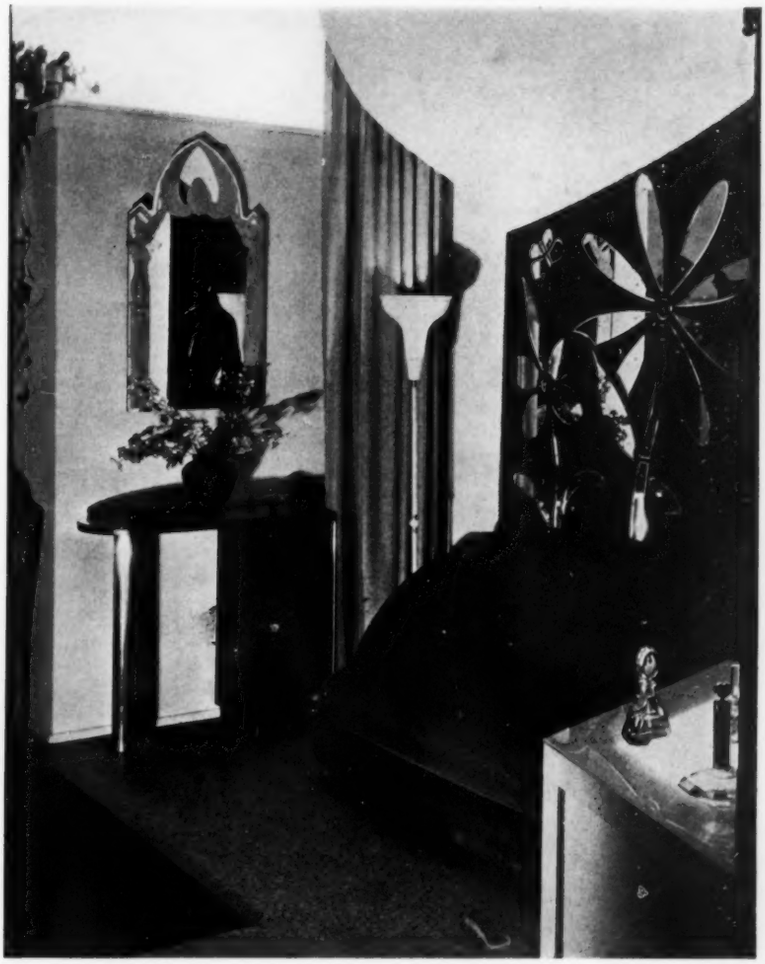
W. P. Woodcock Photos

MYER SIEGEL AND COMPANY STORE, LOS ANGELES
FIEL AND HUNTER, ARCHITECTS

ENTRANCE IS SHOWN ABOVE, DISPLAY WINDOWS BELOW

PERFUME SHOP, DIANA COURT, CHICAGO
DESIGNED BY
ANTON EICHMEIER

Hedrich-Blessing Studio



THE MAIN INTERIOR OF THIS SHOP IS DIVIDED BY HANGINGS INTO AN OUTER AND AN INNER SHOWROOM. THERE ARE ALSO ROOMS WITH PRIVACY FOR CONSIDERATION OF PERFUMES AND COSMETIC MAKE-UP.

Hedrich-Blessing Studio

THE ALTERATION POSSIBILITIES FOR THIS STORE WERE GREATLY LIMITED BY THE OVER-ALL STORE WIDTH OF NINE FEET SIX INCHES. FEATURES OF THE STORE THAT ARE OF INTEREST INCLUDE A LARGE DISPLAY WINDOW AT REAR OF STORE INTERIOR WHICH REVEALS OPERATION OF A MODEL BAKERY; ALL WALL AND FLOOR DISPLAY CASES HAVE THEIR OWN ILLUMINATION.

A BAKERY, WINNETKA, ILLINOIS
VANCE WILKINSON, DESIGNER

Associated Photographers, Inc.

BULLOCK'S MEN'S STORE, SOUTH HILL STREET, LOS ANGELES
JOHN PARKINSON AND DONALD B. PARKINSON, ARCHITECTS

BULLOCK'S MEN'S STORE, SOUTH HILL STREET, LOS ANGELES
JOHN PARKINSON AND DONALD B. PARKINSON, ARCHITECTS

Associated Photographers, Inc.

INTERIORS OF
BULLOCK'S MEN'S STORE
LOS ANGELES

Hedrich-Blessing Studio

INTERIOR: FLOOR—BLUE VIOLET RUBBER TILE WITH ½" WIDE STRIPE AROUND THE ROOM.

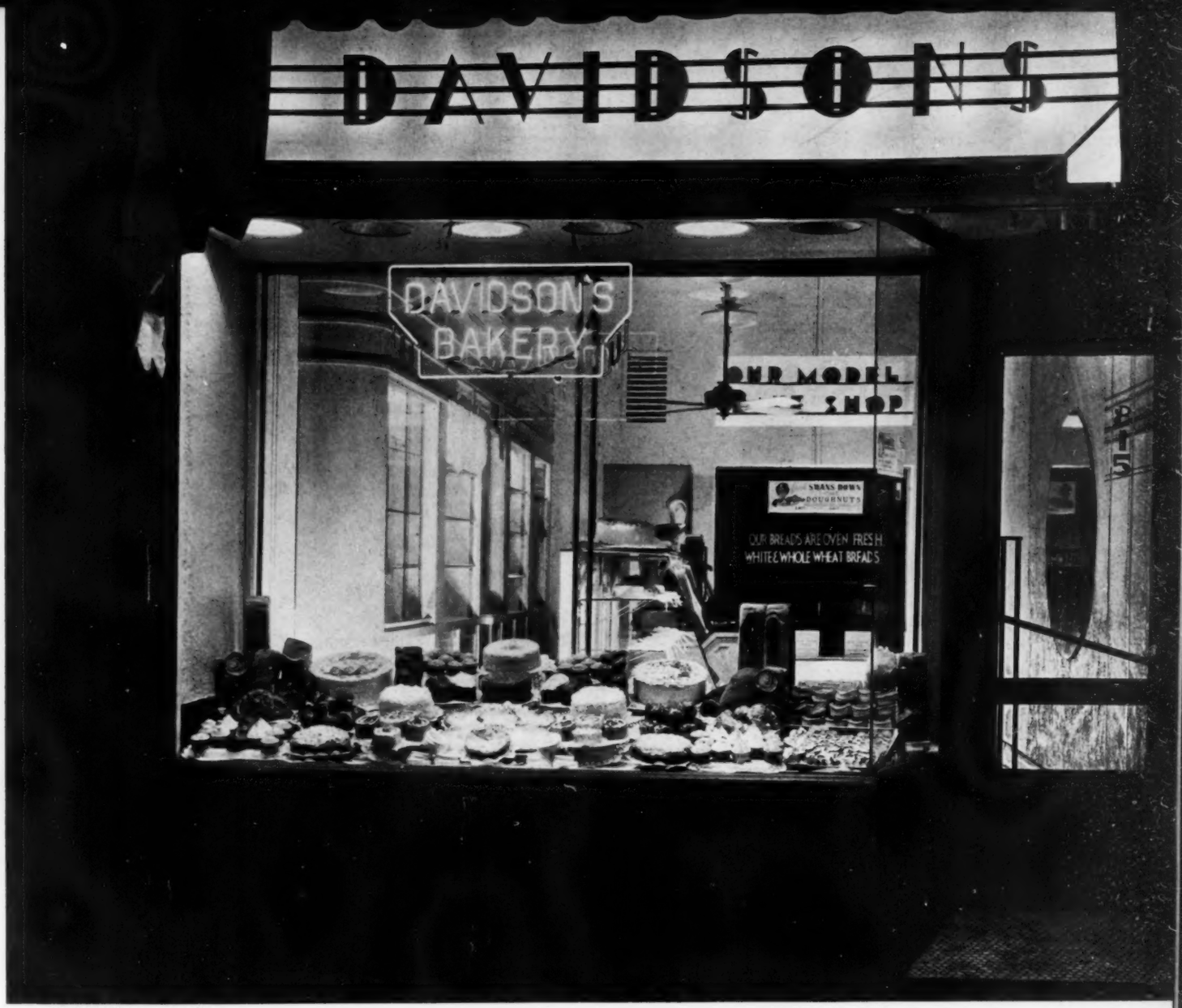
BUILT-IN CASES OF DARK STAINED SYCAMORE, WHITE RUBBER TILE BASE; BLACK GLASS BACK FOR BOTTLE DISPLAY; STORAGE CABINETS BELOW COVERED WITH A BLACK EBONIZED SHELF AND ALUMINUM TRIM.

ALL WALLS ABOVE DOOR HEIGHT IN PLASTER IN OVAL SHAPE.

FREE SUSPENDED CEILING WITH LIGHTING ABOVE.

EXTERIOR: FINISH IN ALUMILITE AND CARRARA GLASS.

PALMER HOUSE LIQUOR SHOP, CHICAGO
HOLABIRD AND ROOT, ARCHITECTS



Hedrich-Blessing Studio

STORE FRONT MODERNIZED WITH MINIMUM COST. THE DOUBLE-TIER SHOW WINDOW IS AN INNOVATION SUITED TO DISPLAY OF FOODSTUFFS. THE STORE FACING IS OF BLACK CARRARA GLASS. WHITE CARRARA GLASS WAS USED AS A FLOOR FOR DISPLAY WINDOWS.

DAVIDSON'S BAKERY, EVANSTON, ILLINOIS
GORDON S. GUNDLING, DESIGNER

Hedrich-Blessing Studio

HOWARD BAKE SHOP, CHICAGO
GORDON S. GUNDLING, DESIGNER

THIS STORE HAS AN UNUSUAL FEATURE IN THE FACT THAT ALL OF THE BACK WALL IS LAID OUT ON A HALF CIRCLE. THE SUSPENDED CEILING WAS INSTALLED OVER A BACK COUNTER AREA WITH A BEAM IMMEDIATELY ABOVE THE MAIN FLOOR CASE. ALL OF THE BACK WALL CASES ARE ILLUMINATED. THE COLOR SCHEME IS EGG PLANT RED, CANARY YELLOW AND PEACH, WITH LINOLEUM IN YELLOW AND RUBY RED. THE DISPLAY WINDOW BULKHEAD HAS BLACK GLAZED TILE AND IS FRAMED WITH ALUMINITE ON THE EXTERIOR. THE COLOR OF THE SIGN IS BURGUNDY RED AGAINST A YELLOW BACKGROUND.

Hedrich-Blessing Studio

ALBERT'S DELICATESSEN AND GRILL, CHICAGO
GORDON S. GUNDLING, DESIGNER

FOOD SHOP AND DELICATESSEN:

ALL OF THE STORE FIXTURES ARE OF WALNUT WITH FLUTED CHROME COLUMNS AND BLACK MARBLE BASES. OVER THE FOOD COUNTER AND OVER THE BAR THERE IS A CANOPY AND IN THE CANOPY ARE REFLECTORS FOR FLOODLIGHTING. THE CANOPY IS SUPPORTED FROM THE CEILING BY CHROMIUM RODS. THE FLOOR IS BUFF AND BLACK TERRAZZO. THE COLOR SCHEME OF THE STORE IS IN SEVERAL SHADES OF GREEN AND WHITE. CHAIRS AND BAR STOOLS ARE UPHOLSTERED IN CHARTREUSE GREEN.

Hedrich-Blessing Studio

THE EXTERIOR FACING OF THIS STORE IS OF BLUE FORMICA. THERE IS CURVED, SANDBLASTED GLASS ON EITHER SIDE OF THE ENTRANCE, TRIMMED WITH STAINLESS STEEL. THE REVOLVING DOOR IS IN ROYAL BLUE. INTERIOR BOOTHS ALTERNATE WITH A BLUE AND YELLOW COLOR SCHEME. THE BAR IS OF BLUE FORMICA; THE BACKGROUND OF THE BAR IS YELLOW; THE CEILING OF THE BAR CANOPY IS CREAM COLOR. TABLE TOPS ARE OF IVORY COLORED FORMICA. THE FLOOR LINOLEUM IS IN CADET BLUE; FURNITURE IS UPHOLSTERED IN ROYAL BLUE.

BLUE DANUBE GRILL, CHICAGO
GORDON S. GUNDLING, DESIGNER

STUDIO AND SHOWROOM OF RUSSEL WRIGHT, NEW YORK

RUSSEL WRIGHT, DESIGNER

IN BACKGROUND IS THE CHROMIUM DISPLAY IN GLASS AGAINST MIRRORS
DRAPES, DARK BROWN
SOFA, LIGHTER BROWN
RUG, CORK COLOR
BEAMS, WHITE AND BROWN
WALL, WHITE
SHELVES, CORK

The display material is made up of several ensembled groups; pottery, chromium-ware, aluminum "stove to table ware" and aluminum informal serving accessories. Because of this variety within the "line," the main problem was to separate these groups into secluded units, at the same time keeping a uniform and unified whole. To solve this problem the space was divided into a series of interlocking L-shaped partitions, each partition performing the double service of secluding a separate group and leading into the adjacent group.

Color as well as form was employed in solving this problem of separating groups within a harmonious whole. White, dark brown and cork tones are used alternately, so that no two adjacent partitions are painted the same color, yet the alternating colors combine in a design for the entire space.

Guild Photography

SHOWROOM AND OFFICE FOR A. H. JEJIZIAN NEW YORK CITY — Designed by ZAREH M. SOURIAN

F. S. Lincoln Photographs

ELEVATOR HALL:

WALLS: PLASTER, PAINTED; COLORS: LIGHT BLUE-GREY, RED, GUN METAL.

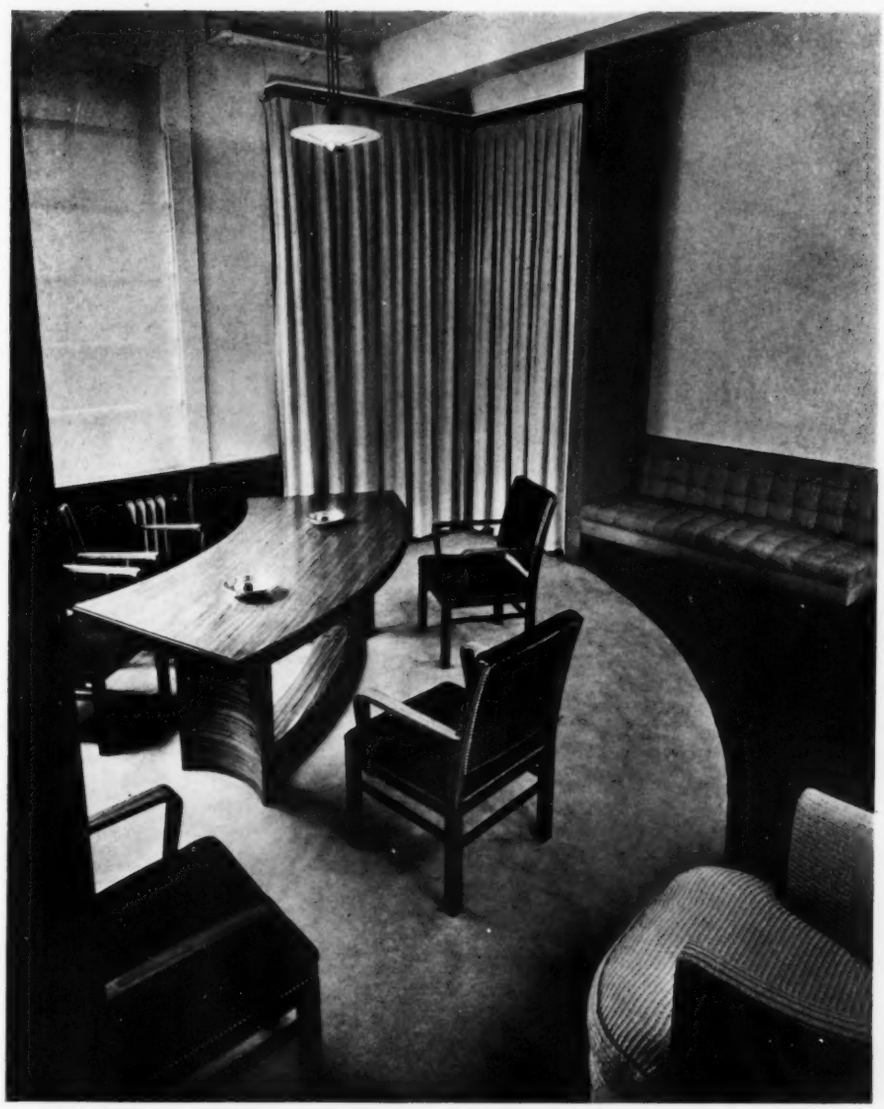
DOORS: COLOR: GUN METAL.

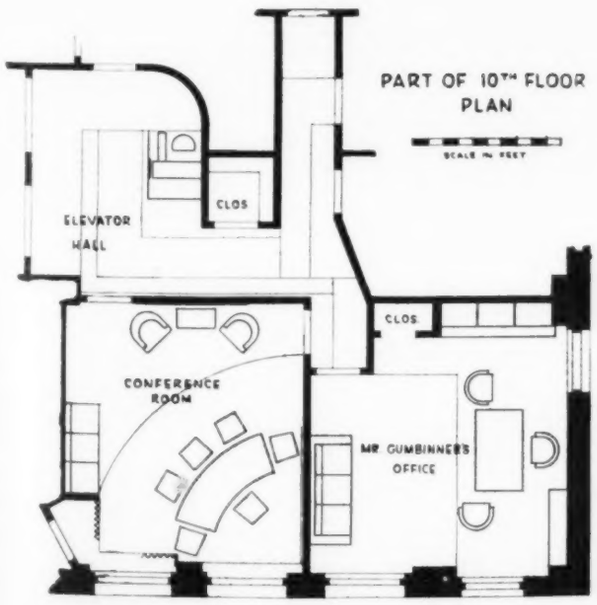
CEILING: COLOR: LIGHT BLUE-GREEN.

FLOORS: COVERING: LINOTILE. COLORS: RED, BLACK AND DARK GREY.

TELEPHONE BOOTH: WOOD: ASPEN WOOD AND BLACK LACQUER.

LAWRENCE C. GUMBINNER ADVERTISING AGENCY
9 EAST 41 STREET, NEW YORK CITY





CONFERENCE ROOM:

WALLS: PLASTER, PAINTED. COLORS: BLUE, BEIGE, AND YELLOW. FLOORS: SEAM-LOC CARPET. COLORS: MODERN BLUE AND SILVER GREY.

CONFERENCE TABLE: WOOD: GONZALES ALVES.

ARM CHAIRS: WOOD: PADOUK. UPHOLSTERED WITH BLACK TWEED.

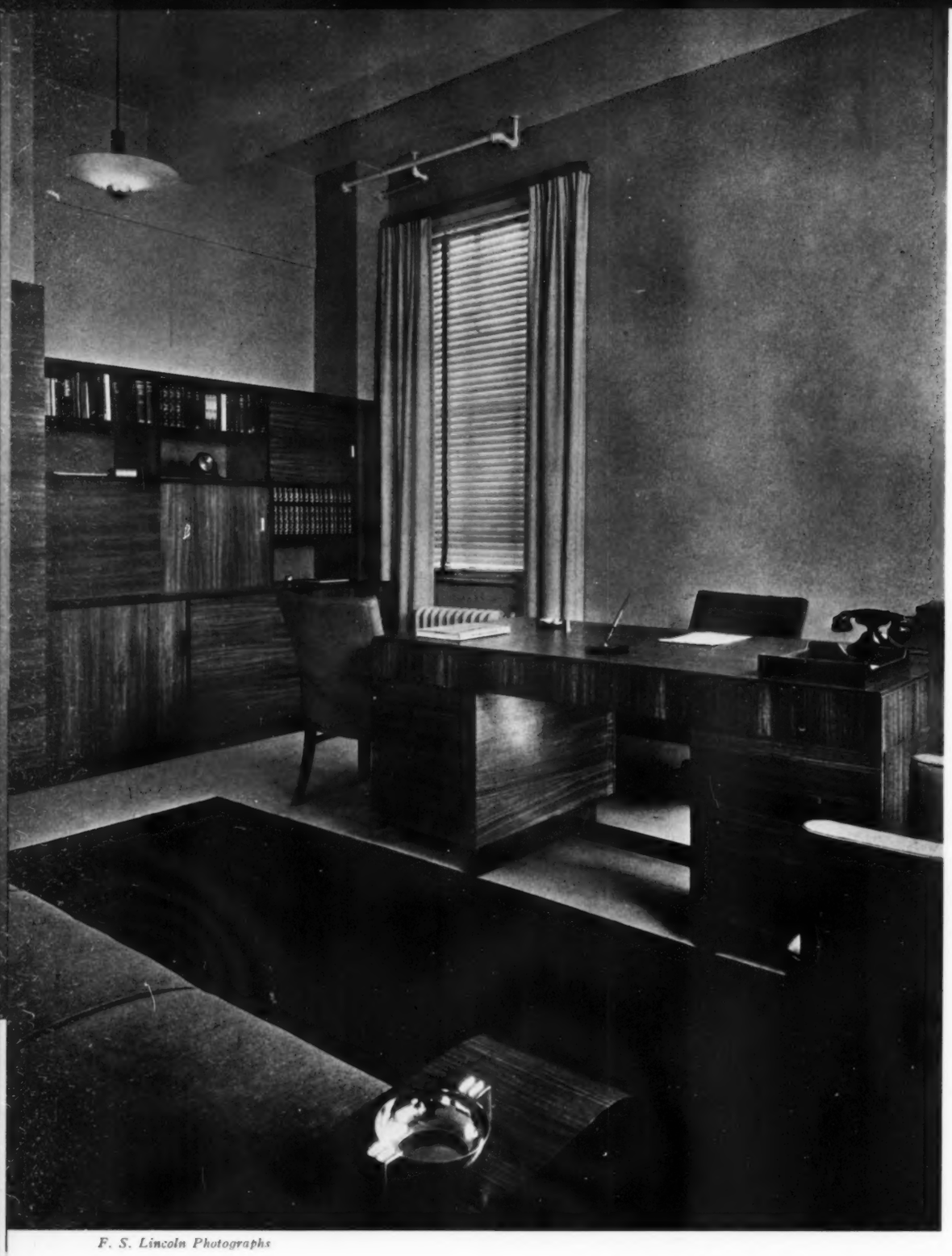
COUCH: UPHOLSTERED IN CORAL COLOR MOHAIR REP.

EASY CHAIR: UPHOLSTERED OUTSIDE IN CORAL COLOR MOHAIR REP; INSIDE NATURAL COLOR ROUGH TEXTURED MOHAIR.

DRAPES: DOE COLOR MOHAIR CASEMENT.

WINDOW: THE WINDOW NOT DRAPED HAS BEEN FURRED OUT AND THE LIGHT ADMITTED THROUGH SANDBLASTED GLASS LOUVERS.

ELEANOR LEMAIRE, DESIGNER



F. S. Lincoln Photographs

OFFICE MANAGER:

WALLS: PLASTER, PAINTED. COLORS: GUN METAL, CITRON, GREY, AND OFF-WHITE.

FLOORS: SEAM-LOC CARPET, SILVER GREY AND NOMAD BROWN.

DESK AND CABINET: BEAN WOOD.

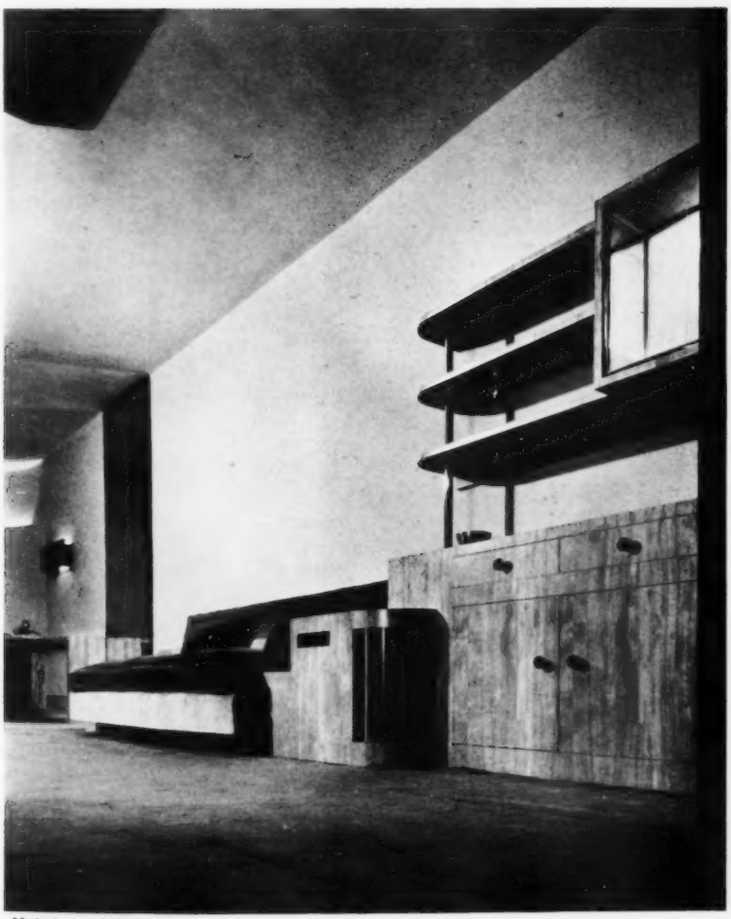
SOFA: BEAN WOOD AND TAUPE TWEED UPHOLSTERY.

DRAPES: LEMON COLOR CHEVRON.

GUMBINNER ADVERTISING AGENCY, NEW YORK
ELEANOR LEMAIRE, DESIGNER

F. S. Lincoln

OFFICE LOBBY OF
MARSCHALK AND PRATT, INC.
NEW YORK CITY

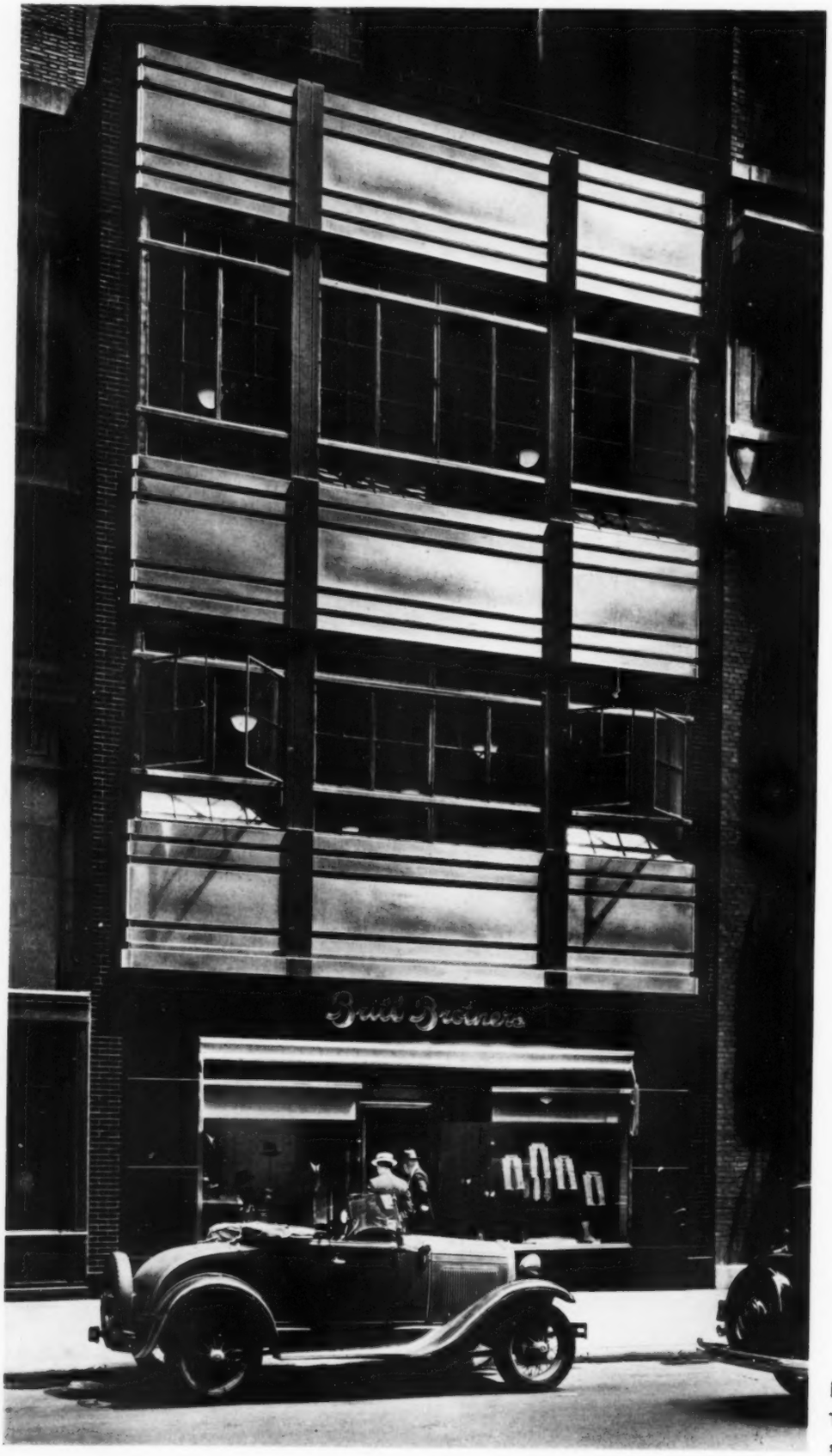


Nyholm and Lincoln

A SHOWROOM, NEW YORK CITY
HOWE AND LESCAZE, ARCHITECTS

BRILL BROTHERS STORE, NEW YORK CITY

SHREVE, LAMB AND HARMON, ARCHITECTS

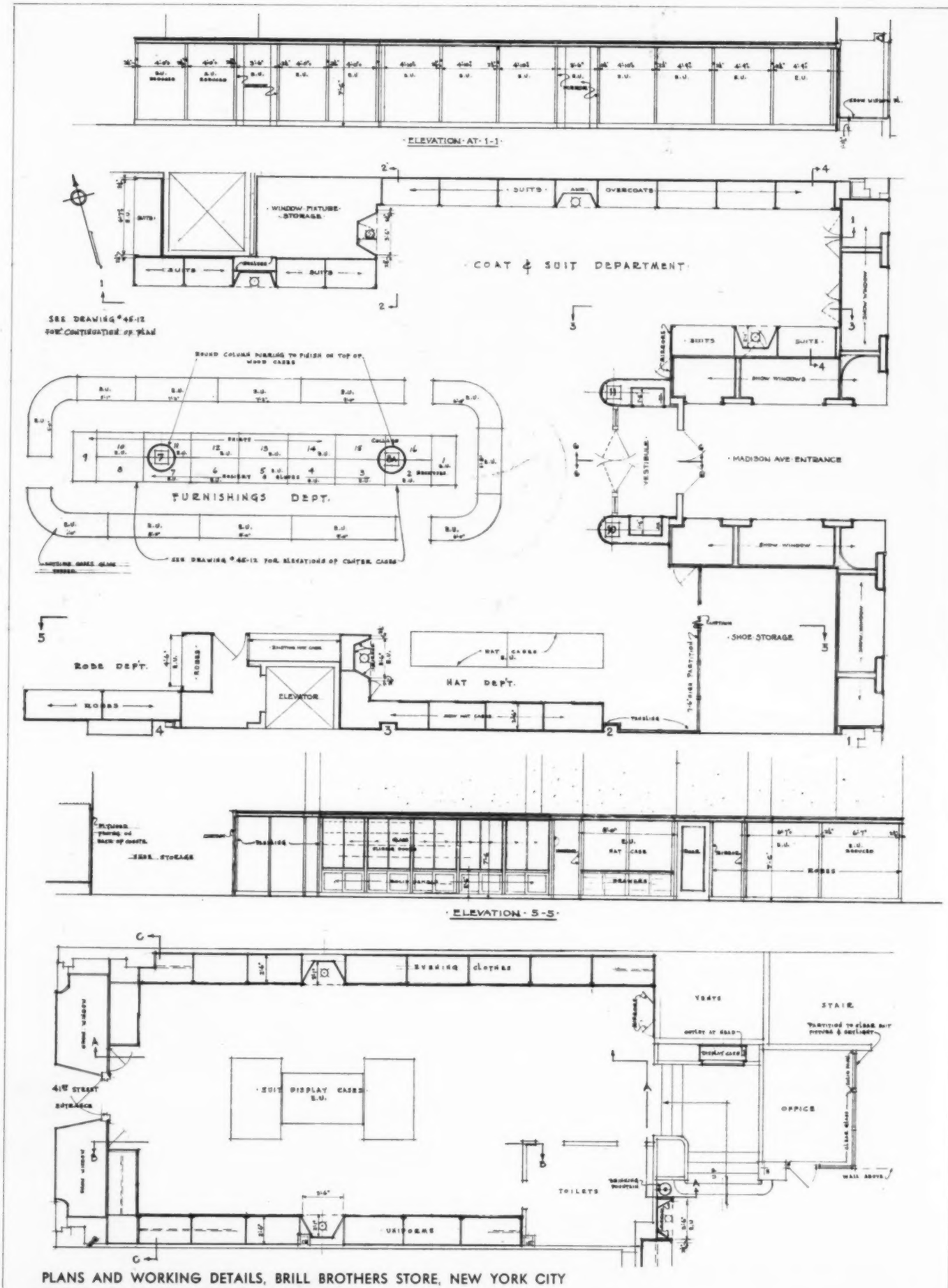


FORTY-FIRST STREET FACADE

The facing materials are stainless steel, glass and brick.

F. S. Lincoln Photos

FACADE ON MADISON AVENUE. The L-shaped plan has frontages on two streets at right angles to one another. Shreve, Lamb and Harmon, architects.



PLANS AND WORKING DETAILS, BRILL BROTHERS STORE, NEW YORK CITY
SHREVE, LAMB AND HARMON, ARCHITECTS

Manning Brothers, Inc.

HICKEY MEN'S STORE IN DETROIT: Façade of waterproofed panels veneered with Congola Alvez. Trimmed in teakwood, stained black, and aluminum. Window backs are in natural finish, pin grain oak. Lancelot Sukert, architect, and Kenneth C. Welch, associate.

PLANNING A SMALL MEN'S SHOP

By KENNETH C. WELCH, A.I.A., and Vice-President, Grand Rapids Store Equipment Company

THE problem was to design a small men's shop in a given space on the first floor of an existing building, replacing a much larger store previously operated by the same organization.

REQUIREMENTS

The site acquired was on a high grade shopping street. The building at the front was 33 feet wide inside; 36 feet at the rear; 99 feet deep; rather irregular in shape and the columns in the front did not line up with those in the rear.

DESIGN

The previous store in another location, having been built some fifteen years before, was typical of that era. It was decided that the new one should be modern but a type of modern that would have a masculine appeal. A modern type was adopted for several reasons:

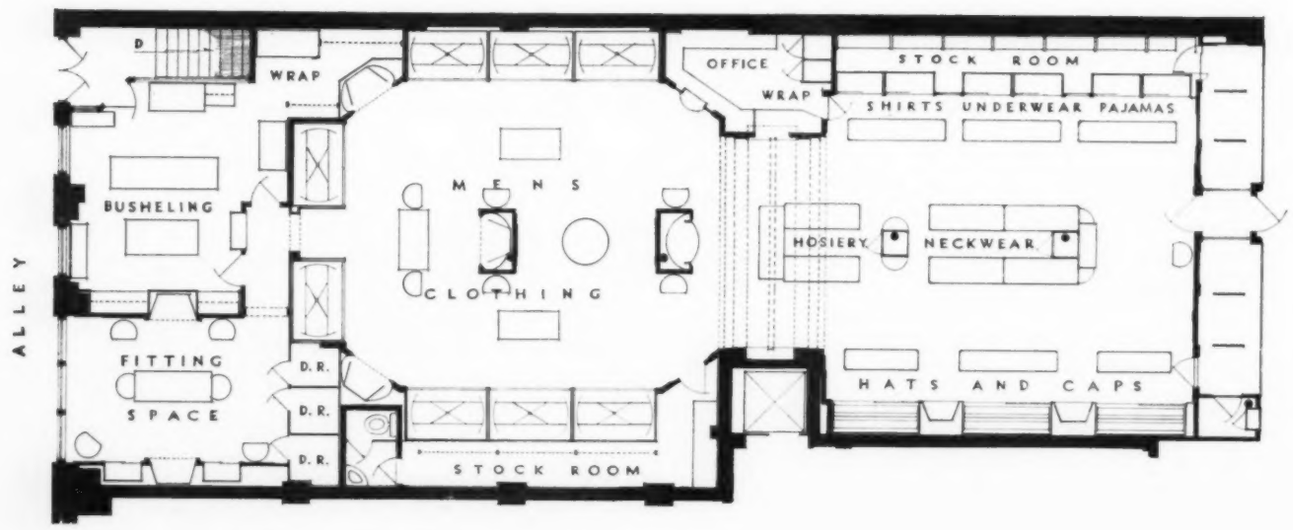
First, it was felt that it is best adapted to featuring of the merchandise.

Second, it was desirable to make the store look entirely up to date.

Third, it was felt that it offered the greatest possibilities for adequate and proper lighting.

Manning Brothers, Inc.

E. J. HICKEY MEN'S STORE, DETROIT
LANCELOT SUKERT, ARCHITECT—KENNETH C. WELCH, ASSOCIATE



Detail view showing wrapping station ledge. Men's clothing section is in area beyond.

← General view of interior looking toward rear of store. Supply outlets for conditioned air are concealed behind cornice in the lighting recess.

GENERAL

Provision was to be made for a men's furnishings section; men's clothing section; busheling room; a small centrally located office and a separate room for fitting.

An elevator shaft serving another portion of the building projected into the space on one side which limited the size of the men's furnishings department. However, the width of the space permitted placing a stock room for men's furnishings on one side leaving room for a center island composed of show cases. This gave the necessary perimeter of show cases for selling merchandise, and the stock room with shelving 7½ feet high together with the usual wall cases permitted the carrying of necessary stock. Carrying highly standardized merchandise such as certain types of men's shirts, underwear, collars and the like in the stock room permitted the use of the visible space for display of style merchandise.

The show cases were all designed with drawer bases; the drawers open on the clerk's aisle. A certain amount of small wares stock, such as neckwear, hosiery and gloves, is carried in the show cases themselves.

The office and central wrapping desk was placed between the men's clothing and the men's furnishings section—a central location, since every transaction in either department requires contact with this spot.

In the men's clothing section revolving cabinets were utilized from the old store but modernized by means of new cornice, pilasters and lighting. In order to balance the two sections and place them on a common axis, a display and triplicate mirror was built around the columns which were off center with those in the front. This also made available a reserve stock room for men's clothing along one wall.

The problem in the men's clothing section was to provide sufficient hang rod space, flexible enough to handle overcoats in season, single height, or men's suits double decked. In this particular instance the revolving cabinets provided a maximum capacity within a limited area.

HICKEY MEN'S STORE
IN DETROIT

LANCELOT SUKERT
ARCHITECT

KENNETH C. WELCH
ASSOCIATE

Left:
Detail of triplicate mirror with indirectly lighted slot at front edge of wings. Illumination in this slot is greatest at bottom and fades out towards top, throwing light where it is desired—on front and back of garment.

Right:
View from men's clothing department looking into hat department.

The extreme rear portion of the store was assigned to the busheling room and directly next to it the fitting room space. It is desirable in most men's stores to segregate the fitting service from the actual sales floor. Requirements were to provide three dressing rooms, an open floor area of approximately 12 by 19 feet with daylight, and a long narrow table in the center which could be used for measuring clothing. The close proximity of this room with the busheling room made it convenient for the fitters who are constantly traveling between these two departments.

LIGHTING

One of the most important features was the illumination of the store. A rather unusual combination of lighting was developed, especially in the men's furnishings section. The wall cases with plate glass, metal framed, sliding doors and plate glass shelves on one side and rods for men's hats on the opposite side, were to be strongly illuminated to emphasize the display of merchandise.

The illumination behind the cornice in addition to illuminating the case below indirectly illuminates a dull stippled white recess above the case. Forty-watt lamps spaced approximately 18-inches on center not only uniformly light the merchandise but also uniformly light the recess above, adding much to the illumination of the room. Most important, this gives the only effect of light since the major source is entirely concealed. A patent has been applied for on this method of illumination—combining display lighting with indirect illumination above. This same light recess is also effective for silhouetting movable departmental or advertising signs, the latter being the one form of ornament that was used.

The major source of illumination in the men's furnishings section is from concealed recessed lights 4′ 6″ on center and on a line and directly over the show cases. These consist of a reflector, a ribbed lens, and

Manning Brothers, Inc.

an egg crate grid, the latter with a special dull black finish. The ribbed lens tends to send the light parallel with the show cases in the same manner that modern automobile headlights direct a band of light. The result is that by using only 3.8 watts per square foot (exclusive of the lights in the show cases) 45 foot-candles are produced on the top of the show case. This is better than four times the amount of light in the average men's store and as a consequence any merchandise displayed either in the show case or on top of it is brought out in sharp contrast with the surroundings.

A similar type of lighting is used in the men's clothing section over the wall cases, but the ceiling lighting is changed to give the more general distribution required.

COLOR SCHEME

The woodwork throughout is in two-tone color of pin grained selected oak, with the large flakes generally found in quartered sawed oak eliminated so that the wood is small in scale and simple in pattern.

The insides of the cases are left practically a natural color whereas the exterior is stained a light, soft brown.

The carpet is in four tones of taupe. The plastered surfaces and wallboard surfaces that are painted are made to harmonize with the floor covering.

The old cast-iron columns at the front of the store are surrounded with a column enclosure, two sides of which are white glass lighted from behind. This lighting is decorative rather than useful although it adds to the general illumination.

Since the ceiling is in no way used to reflect light it is painted a dark blue with black bands connecting the lighting unit.

Most of the merchandise displayed is colorful, which together with the lighting scheme, the color scheme and simplicity of the equipment concentrates the customer's attention on the merchandise. This, after all, is one of the primary functions of retail store design.

STORE MODERNIZATION

A check list to serve as a reference guide for alteration of a building for improved retail store purposes.

PLANNING

Arrange public space, work space, counters to suit specific merchandising needs. (The U. S. Department of Commerce assists by supplying data on store types for retail trade.) Painstaking studies have been made to assist the processes of buying and selling. Store arrangement varies with the type of goods to be sold. (See Store Buildings and Neighborhood Shopping Centers by Clarence S. Stein and Catherine Bauer, THE ARCHITECTURAL RECORD, February, 1934, pp. 174-187. Also, Planning the Retail Store by K. Lönberg-Holm, June, 1931, pp. 497-514.)

Plot on sketch plans the departments of store, aisles, counter space, storage, offices, and so on.

Reduce store size to convenient sales and work area.

With speedy replacement of goods for sale from the central market or warehouse, store sizes have become smaller.

Enlarge area for sales by changing storage to basement or loft.

Sixty feet is generally a maximum depth for sales area for retail stores.

Subdivide with movable partitions (permitting later alteration).

Provide facilities for parking cars.

Consider a store front that can be entirely open, without obstruction during greater part of spring, summer and autumn. "The best store front is no front. The store itself is the best display window. Groceries, hardware stores, dry goods stores, bookstores and furniture stores have eliminated with advantage display windows with high backgrounds and make the whole store visible from the street."

REPAIRS AND ADDITIONS

Examine structural condition of walls, floors, roof.

Add structural supports required.

Repair brickwork, stonework and coping.

Patch stucco and concrete.

Enlarge windows for improved daylighting and ventilation.

Check windows to see that they work properly.

Replace panel doors with doors of flush type.

Scrape and refinish wood floors or

Relay floors with wood, tile, terrazzo or marble, or

Cover wood floors with linoleum.

Plaster walls and ceiling.

Face walls with plywood or flexwood.

Remove antiquated partitions, cabinets and counters.

Replace old cabinets and counters with new equipment.

Provide low, open shelves to facilitate self-service.

Use a clear, readable and well-lighted sign to designate store and attract trade.

"Well-designed lettering will do more to draw passing trade than show windows. Show windows are of little use to passers-by in automobiles."

Subordinate equipment display to display of merchandise.

Doors should be easily operated and at least 3 feet 6 inches wide; 4 feet is recommended. Larger stores should have separate doors for access and egress, or separate doors for each aisle. Center entrance is most desirable for smaller stores. Side entrances are generally objectionable.

Add Neon signs with colors to identify various departments.

Enlarge or reduce size of show windows (see requirements for correct display).

Provide sidewalk awning for windows with south and west exposures.

Add new heating plant.

Convert coal-burning boiler to oil-burning equipment for greater convenience and to save space.

Install automatic heat control.

Install ventilation equipment.

Replace antiquated plumbing fixtures with new.

Replace corroded iron piping with brass or copper piping.

Add washroom to first floor for customers and another for service.

Because of variety of color introduced by merchandise, it is generally preferable to adopt a single color for walls and trim.

Paint walls and fixtures.

Paint ceiling a light color to augment light reflection and diffusion.

Install new lighting system with light directed to counters and display cases.

GENERAL LIGHTING

Increase service cable.

Rewire with copper sufficient to take double contemplated connected load.

Put all wiring in metal conduit.

Fuse all circuits with circuit breakers.

Location marker—illuminated sign.

SHOW WINDOW LIGHTING

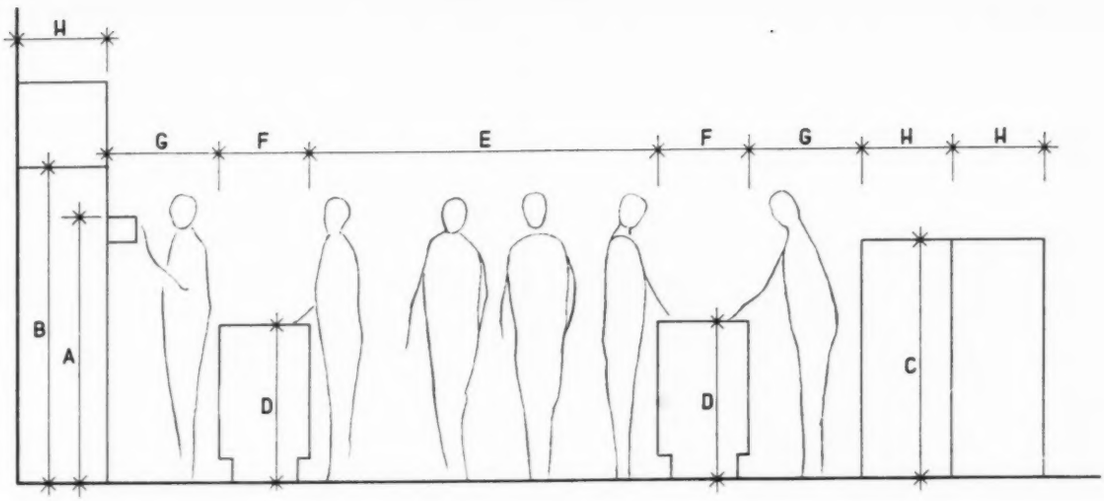
Allow one circuit to each six feet of lineal window. Wire lamps alternately.

Allow two additional circuits to each window for accessories.

Wire lamps alternately.

Allow one circuit also for each 20 lineal feet of windows for footlights if contemplated.

Overhead lights 12 inches apart, preferably flushed in.



STORE FIXTURE DIMENSIONS

HEIGHTS:

A. MAXIMUM PRACTICAL HEIGHT TO TOP OF DRAWERS . . . . . 5'–4"

B. MAXIMUM PRACTICAL HEIGHT TO TOP OF SHELF . . . . . 6'–4"
Spacing of shelves and overall height dependent on (1) architectural effect and proportion to height of room (2) whether display is placed overhead.

C. MAXIMUM OVERALL HEIGHT OF CENTER STOCK FIXTURE TO SECURE GOOD VISIBILITY OVER . . 4'–9"
Trend today with decrease in stocks to make even lower 4'-0" to 4'-6" to further increase visibility of whole floor.

D. SHOW CASE HEIGHT FOR STANDING SELLING . . . . . 3'–2"
This is slightly lower than generally used in past.

D. SHOW CASE OR COUNTER HEIGHT FOR SEATING CUSTOMERS . . . 2'–10"

PLAN DIMENSIONS:

E. WIDTHS OF CUSTOMERS AISLES. MAIN AISLE MINIMUM WIDTH TO PERMIT TWO CUSTOMERS TO PASS WHEN CUSTOMERS ARE STANDING AT COUNTER . . . . . 7'–0"
Important, main-heavy traffic aisles should be wider—11' to 12'.
Minimum secondary—low traffic aisles 4'6" to 5'-0".

F. COUNTER DEPTHS TO ACCOMMODATE GREAT MAJORITY OF MERCHANDISE . . . . . 1'–10"
Show cases in the past generally made 2'-0" *but improved construction and standardization of folds in many lines has permitted this decrease, giving additional space to aisles.*

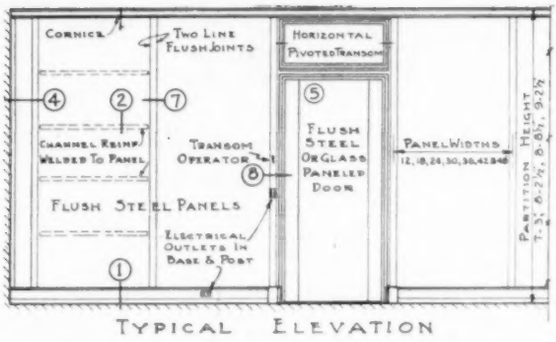
G. CLERK'S AISLES. DEPENDENT ON POSSIBILITY OF TAKING OUT DRAWERS IN STOCK FIXTURES FOR CLEANING . . . . . 2'–2" to 2'–3"
The above also permits clerks to pass. If latter is not necessary and drawers not used it can be a minimum of 1'-6". Wide clerk's aisles have tendency to expose lower part of stock fixture and floor, often littered, to customer's view.

H. STOCK FIXTURES TO ACCOMMODATE MOST MERCHANDISE TODAY, ESPECIALLY SMALL WARES, ARE IN DEPTH . . . . . 1'–10"
This dimension must be carefully checked, however, with the merchandise to be carried.

If overhead lights are exposed, use pipe or patented wireway for wires.
If flushed in, use flexible metal covered cable.
Convenience outlets in ceiling every six lineal feet of window.
Convenience outlets in baseboard every five feet.
Two floor receptacles in each window.
Provide valance.
Provide curtain.
Provide glare shields on overhead exposed, open mouth equipment when used in backless, glassbacked or island windows.
Use translucent window reflectors if upper part of window is to be used as a sign.
Light, neutral matte finish for window interior.

STORE INTERIOR LIGHTING

One circuit for every 200 square feet of floor area on an average for overhead lighting.
Built-in flush lighting constructions or totally enclosed functional luminaires.
Self lighting in show cases.
Counter lights for color discrimination where required.
Individual switches for each lighted show case and each lighting source 200 watts or over.
Wire overhead lights alternately when not switched individually.
Counter convenience outlets (duplex) every six feet.
Light values to automatically maintain lighting level where daylight provides all or part of the illumination, part of the day.



FLUSH TYPE STEEL PARTITION SUITABLE TO STORE INTERIOR ALTERATION (Courtesy E. F. Hauserman Co.)

Illuminated location and direction signs.

Light, matte interior surface finishes when semi-indirect or indirect lighting is to be used.

All equipment to take standard lamps of as few sizes as possible to avoid errors in relamping and simplify maintenance.

SHOW WINDOWS

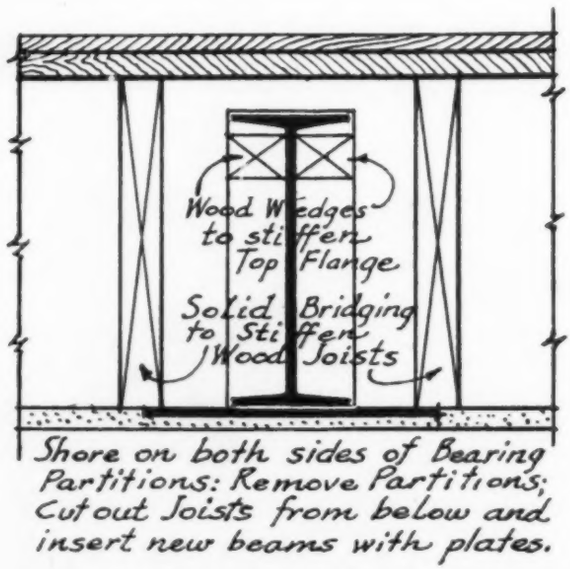
The design of display level above the floor is determined by the nature of the merchandise.

Show window platforms for grocery stores are usually 20 to 28 inches above the sidewalk; for shoe stores, from 12 to 16 inches. Furniture stores, automobile show windows and kindred stores have their show window platform practically on the street level.

The depth of show windows varies from a minimum of 3′ for jewelry stores; around 4′ to 4½′ for men's stores and up to 7′ to 10′ for department stores. Proportion the depth of a window to its width—and the ideal ratio in this respect is approximately two to one. That is, it should be twice as wide as it is deep, because the initial impression of any window is gained when it is being approached at an angle, and if it is too deep for its width it is difficult to trim without hiding the merchandise. Department store windows can vary in widths and depths due to the fact that they carry lines of so many different sizes, but for furniture the windows should be, if possible, 10′ in depth, and with a width accordingly.

Window height is governed by display requirements and by the architectural effect on the exterior. It is evident that men's furnishing windows can be lower than the department store window displaying rugs and home furnishings or even ready-to-wear. Jewelry windows and shoe store windows can, of course, be much lower.

Bulkhead heights vary for ready-to-wear and today they are kept around 18″ to 20″. In jewelry stores and other types they are raised up so that the floor is from 3′ to 3′ 6″ above the sidewalk. This can be done by the actual bulkhead over the plateau on the interior, but again the architectural effect in proportion should largely govern this, it being a general rule that small merchandise, such as jewelry, shoes, etc., is better raised up nearer the customer's eyes; whereas furniture and ready-to-wear on full forms should be placed down to give the customer more of a normal viewpoint.


Wood Wedges to stiffen Top Flange
Solid Bridging to Stiffen Wood Joists
Shore on both sides of Bearing Partitions: Remove Partitions; Cut out Joists from below and insert new beams with plates.

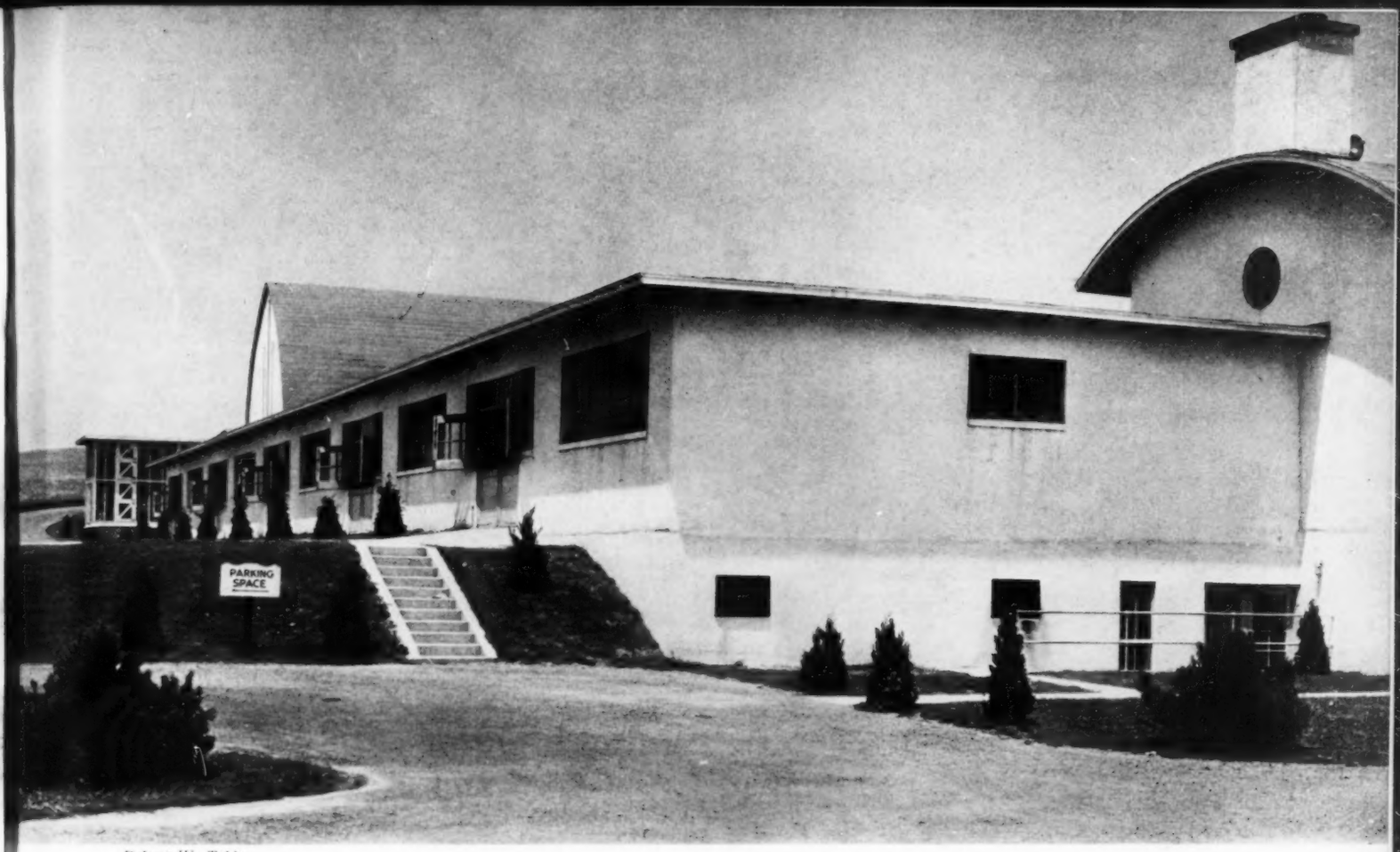
DETAIL FOR OBTAINING FLAT CEILING WHERE PARTITION WAS REMOVED. THE PACK-WOLIN SHOP, DETROIT. LANCELOT SUKERT, ARCHITECT.

ESTIMATED SPACE REQUIREMENTS FOR STORES OF VARIOUS TYPES*

Type of Store	Dimensions	Area (Sq. Ft.)	Authority
Grocery	40′ x 60′	2,400	Safeway Stores, California.
	35′ x 60′	2,100	Average chain store doing $3,000 weekly business.
	30′ x 40′	1,200	Lönberg-Holm, architect.
	20′ x 45′	900	Carl Dipman, editor of *The Progressive Grocer*.
	20′ x 35′	700	Average chain store doing $1,200 weekly business.
	28′ frontage		W. F. Williamson for store doing $100,000 business annually.
	16′-18′ front		W. J. Baxter, Chain Store Research Bureau.
Grocery and Meat	100′ x 100′	10,000	Ralph Morgan, president of Chain Store Research Bureau.
	60′ x 100′	6,000	Average store.
	35′-50′ front		W. J. Baxter.
Drug Store	20′ x 80′	1,600	Ralph Morgan.
Variety (5 and 10c)	40′ x 150′	6,000	Kresge and Woolworth.
Specialty—Hardware, etc.	20′ x 80′	1,600	Ralph Morgan.
	20′ x 36′	720	Ideal electrical contractor's, National Lamp Works.
Chain Department	50′ x 120′	6,000	J. C. Penney average.
Shoes	20′ x 100′	2,000	Wise Shoe ideal.
	20′ x 80′	1,600	Walkover ideal.
	15′ x 75′	1,125	Beck Hazzard ideal.
	18′ frontage		W. J. Baxter.
Candy	7′ x 40′	280	Mary Lee shops.
	or 9′ x 30′	270	
	18′ frontage		W. J. Baxter.

All store examples and estimates from Baxter, William J., *Chain Store Distribution and Management*, 1932; Williamson, W. F., *The Retail Grocer's Problems*; U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce.

*From *Store Buildings and Neighborhood Shopping Centers*, by Clarence S. Stein and Catherine Bauer, THE ARCHITECTURAL RECORD, February, 1934, p. 182.



Robert W. Tebbs

COW STALLS WITH BARN IN DISTANCE

LAUXMONT DAIRY

AT WRIGHTSVILLE, PENNSYLVANIA
DELANO AND ALDRICH, ARCHITECTS

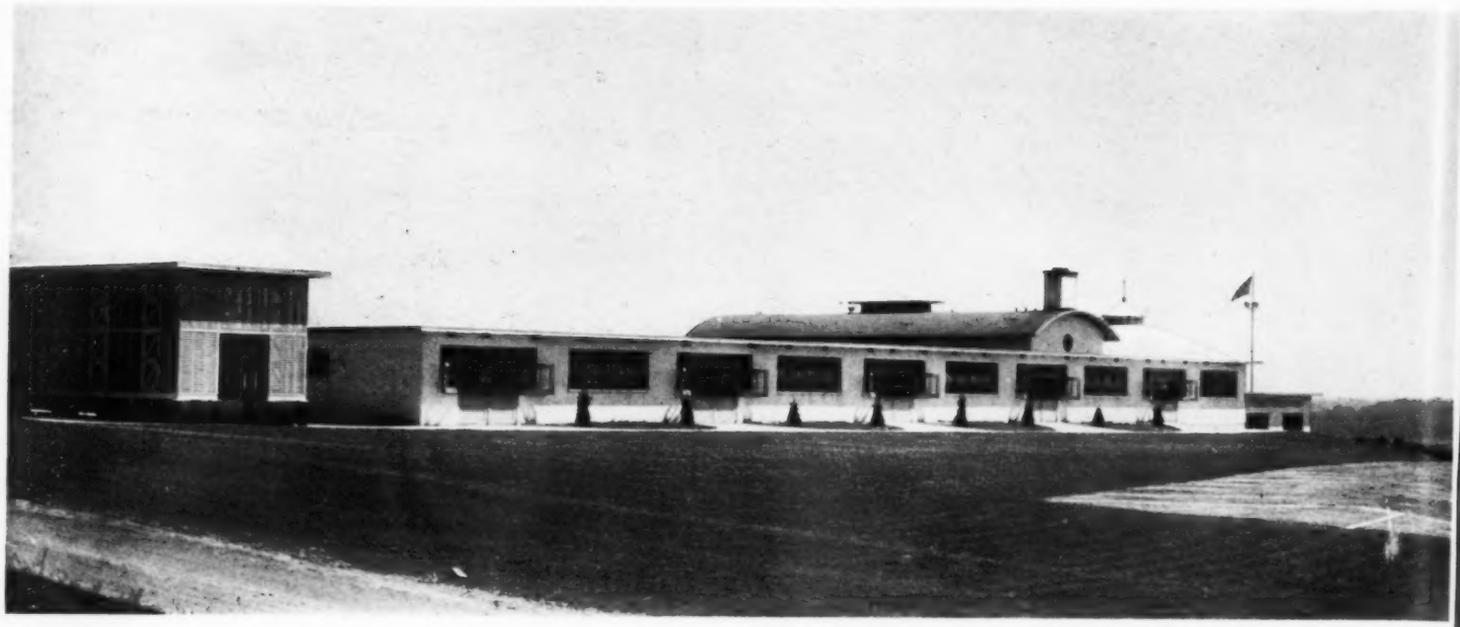
AS has become the practice on many of the best dairy farms within the past five years, the cows are milked in a special room, known as the "milking parlor," instead of in the barns in which they live. But, in addition, at Lauxmont, they are kept loose in pens instead of being fastened by the neck in stalls; this is an innovation.

By referring to the plan of the dairy, it will be seen that there are two cow barns connected by the building that contains the milking parlor. At milking time, the cows are allowed to come from their "loafing pens" to the milking parlor through the alleys along the outer walls of the barns, passing first through a room in which the udder and adjacent parts are washed with a spray of warm water and dried with a towel.

In the milking parlor, the cows enter stalls which hold them so that they cannot move about but are comfortable. They are given water to drink, in a fountain fixed to each stall, to keep them quiet during the milking. The milking machines are applied and the milk is drawn off under vacuum into sealed glass jars that hang from scales, one for each cow, so that the weight of milk produced can be noted. From these jars the milk passes through pipes to a pair of cylindrical glass tanks. These tanks release the vacuum and the milk flows by gravity from this point to the cooling tank, in a nearby room, and from there to the bottling machine.

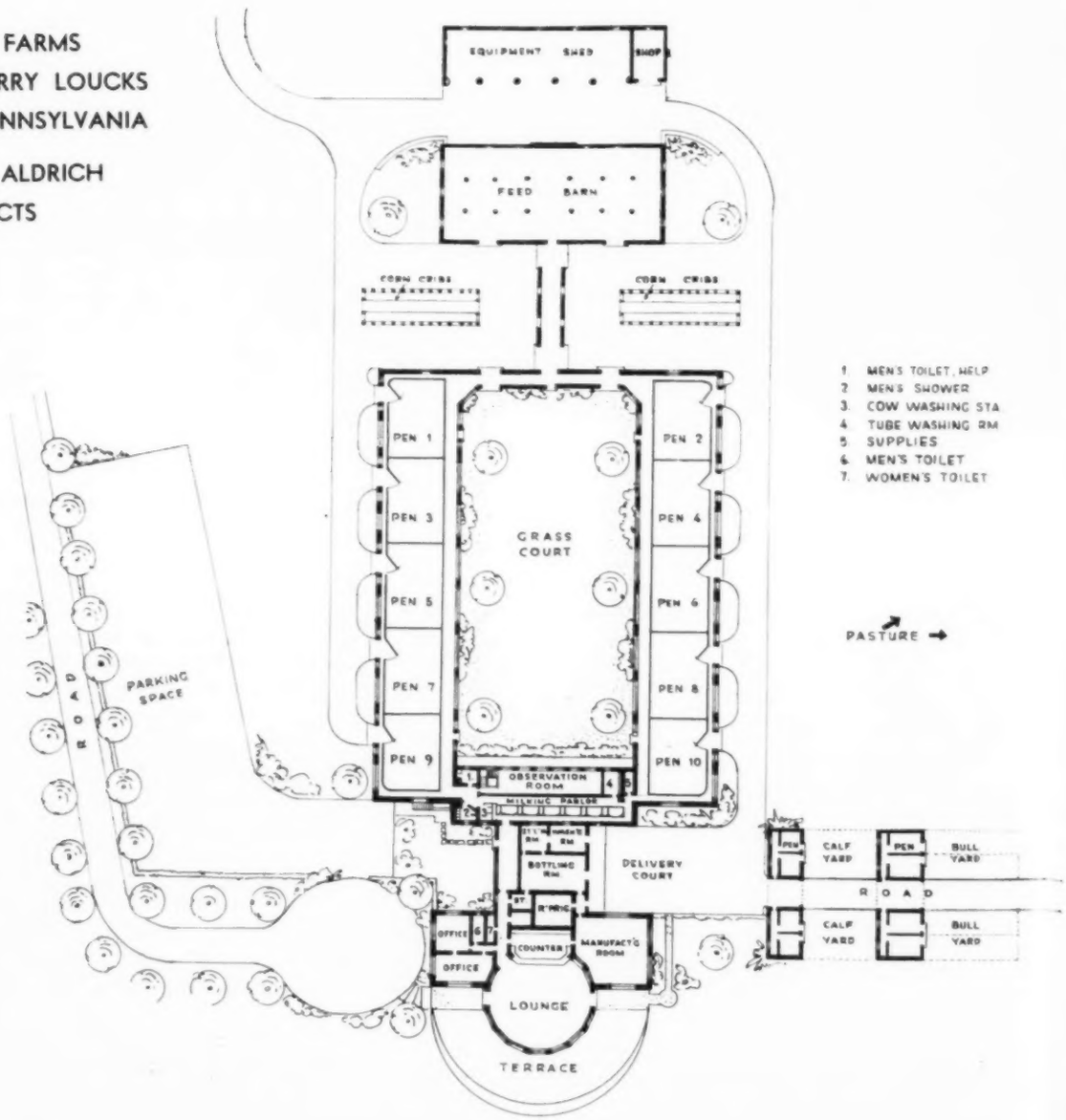
From the time the milk is drawn from the cow into the milking machine until it is sealed in the bottles it is inclosed for protection from contamination. This method, which was perfected at the United States Department of Agriculture Experimental Dairy Farm at Beltsville, Maryland, in July, 1928, has already been widely adopted by large commercial producers of milk. It is known as the combine milking system.

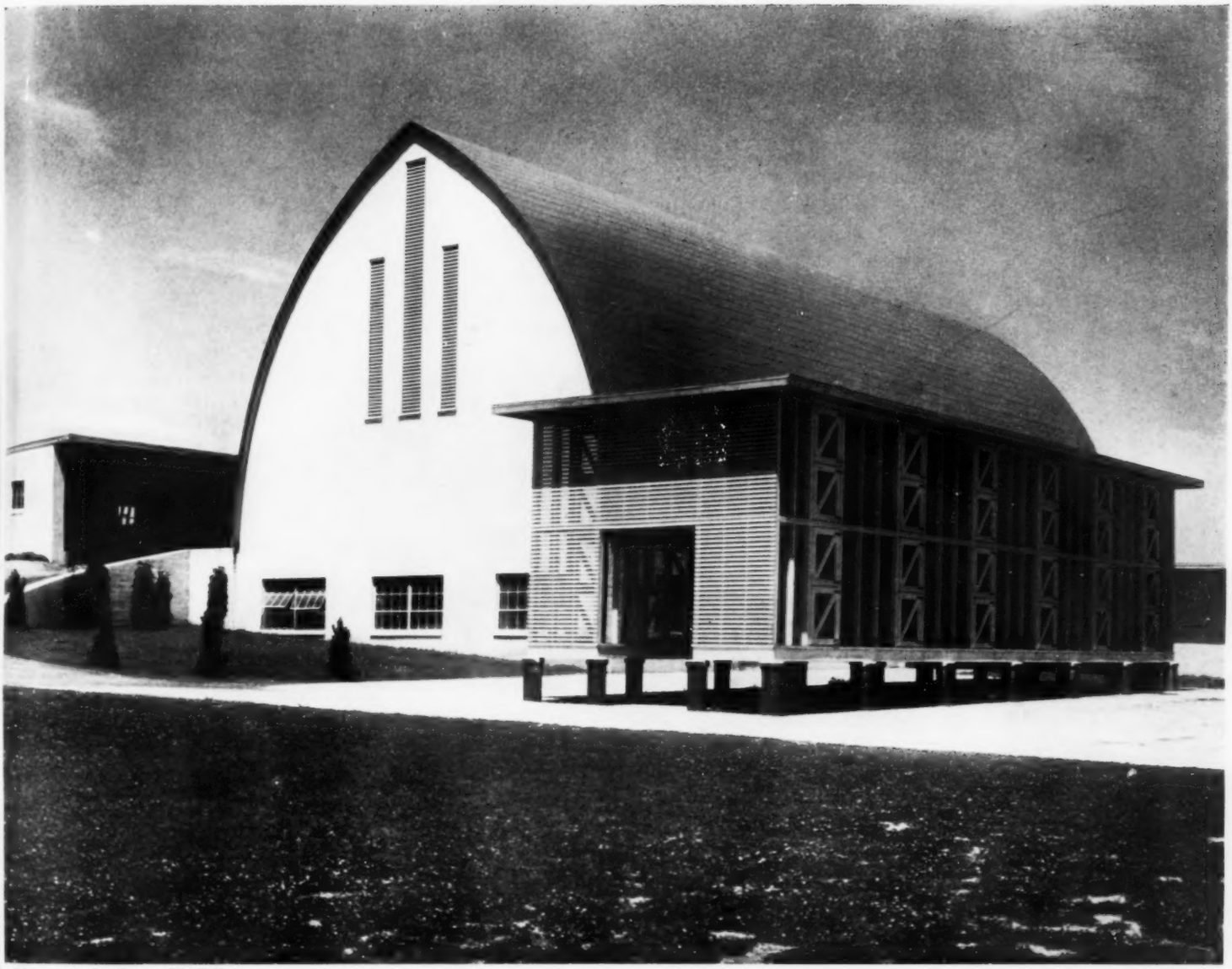
The milking machines are operated by vacuum and



LAUXMONT FARMS
ESTATE OF S. FORRY LOUCKS
WRIGHTSVILLE, PENNSYLVANIA

DELANO AND ALDRICH
ARCHITECTS





Photographs by Robert W. Tebbs

CORN CRIBS AND BARN

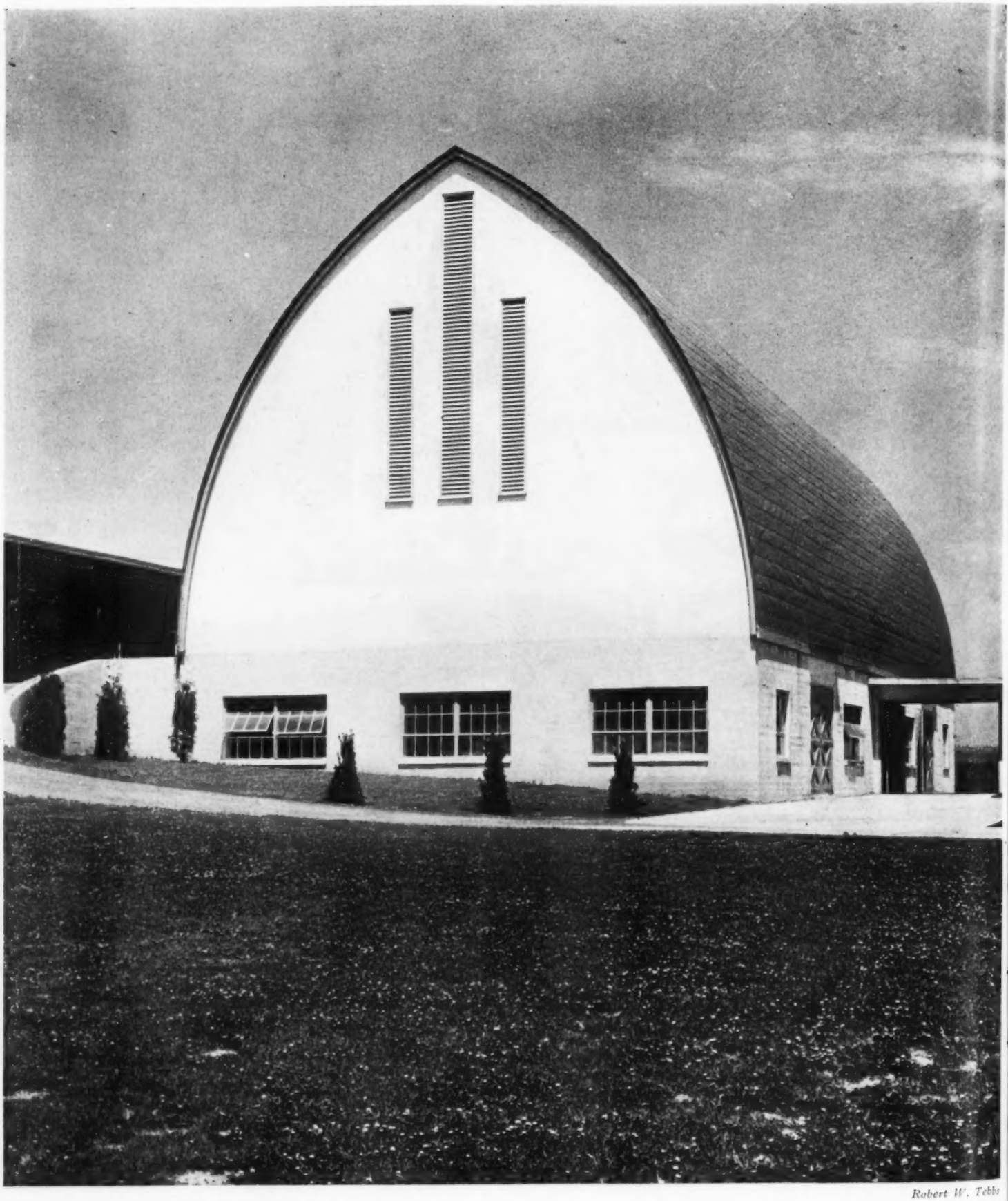
their pulsations, under magnetic control, are timed to induce the maximum flow of milk. One man can operate several milking units, usually from three to five. At Lauxmont, there are six milking units, one for each of the six milking stalls, which are arranged in tandem.

Between the milking of one cow and the next the parts of the milking machine that come in contact with the cow can be cleansed very quickly by insertion in a funnel-shaped sterilizer attached to each stall.

After each cow is milked, she is returned to her pen. It has been found that cows learn the routine very readily. This makes for efficiency, for the work comes to the worker. It makes for cleanliness, not only because the milk is constantly inclosed, but because the operation is conducted in a room that can be kept scrupulously clean and the operator can keep himself clean also. It is not possible to approach this degree of cleanliness in barns in which the cows live.

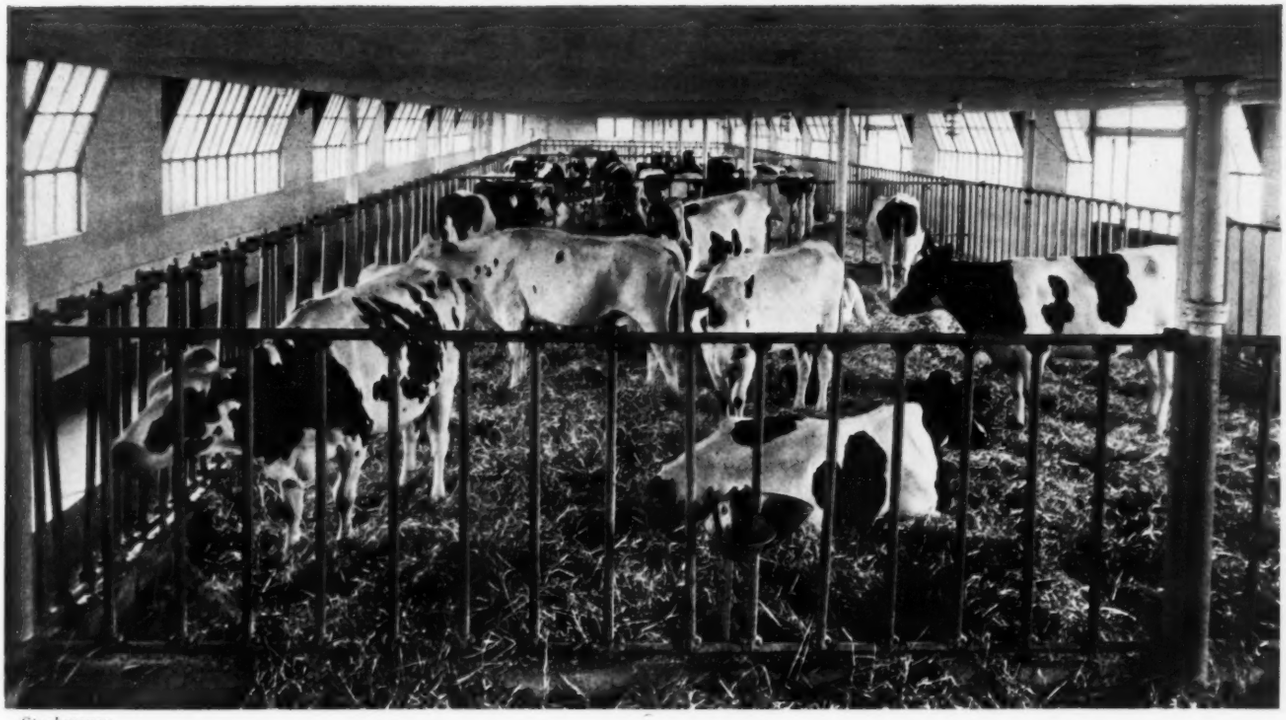
The milking parlor does away with the hard task of attempting to keep the barns clean enough for milking and there is, consequently, no need to keep the cows in stanchions. The cows are allowed to run in pens with deep bedding all over the floor, which is renewed at intervals. This is more comfortable for the cows and it saves labor. At Lauxmont each "loafing pen" is ample to accommodate 20 cows and, as there are ten pens, the barns can comfortably house a herd of 200 cows. The combine milking system is applicable to herds of from 25 cows upward.

Visitors can watch the milking from easy chairs in the observation room, which is provided with large plate glass windows overlooking the milking parlor. The observation room is an important feature of a dairy where this system of milking is employed, for visitors like to see the operation and are impressed with the cleanliness



Robert W. Tebbs

THE BARN, LAUXMONT FARMS
DELANO AND ALDRICH, ARCHITECTS



Strohmeyer

"LOAFING PENS" IN ONE OF THE BARNS
LAUXMONT FARMS — WRIGHTSVILLE, PA.

of the method; this has advertising value for the dairy.

There is a circular lounge in which there is a milk bar. Here ice cream also is sold. Along the passage between the lounge and the observation room, plate glass windows give visitors a view of the bottling machine in operation.

A large parking space for automobiles is provided.

The buildings have been placed on a sloping site, which permitted advantageous planning in different levels. The feed barn, with the implement shed beyond it, is at the high end of the group. The slope of the ground makes it possible to drive into the feed barn at the upper level, on the side away from the cow barn, and to bring the prepared feed out at the lower level, along the road between the corn cribs, to the cow barns. Four silos are in process of construction and their place is indicated on the plan in connection with the feed distribution system.

Inside the cow barns, the feed is distributed in the mangers from small trucks which men trundle along the feeding alleys. These alleys are elevated, at the level of the tops of the mangers, to prevent the loss of feed, for more or less is always tossed out of the manger by the cows. In order to insure cleanliness in handling the feed, the men are dressed in white and wear white rubber boots. There are stanchions along the mangers, so that the cows can be fastened at feeding times, to prevent interference with one another and to insure even feeding.

The slope of the ground has been utilized also in planning the milking parlor, observation room, lounge, bottling room, cooling room and ice cream room with their connecting passages, and compactness is a feature. The cooling tank is elevated so that the milk flows naturally down to the bottling room and to the ice cream room. The whole system is arranged with a minimum of short length pipes which are taken down and sterilized after every milking. The passage is depressed so that visitors pass beneath the milking parlor and reach the observation room by ascending stairs. A belt conveyor carries the bottles from the sterilizing room around the bottling machine and into the refrigerator. The calf pens and bull pens, with their yards, are placed at one side not far from the lounge building, where they serve as an attraction to visitors.

The barns are plain and simple, built with stuccoed cement block walls and slag roofs, on wooden timbers, that slope slightly towards the court. Wide projecting eaves on the sides of the flat-roofed corn cribs shelter the corn from rain, while the open construction of the sides of these buildings permits it to dry. The corn cribs are supported on glazed tile pipes filled with concrete, making the building rat proof, for the smooth, hard surface of the tile does not afford any foothold for the rodents.

Though this dairy is operated as a business it is on the estate of S. Forry Loucks, and is therefore a hobby of the owner.

EUGENE CLUTE.

OBSERVATION ROOM WHERE VISITORS CAN WATCH THE MILKING
LAUXMONT FARMS—WRIGHTSVILLE, PA.

Photographs by Robert W. Tebbs

THE MILKING ROOM
DELANO AND ALDRICH, ARCHITECTS

DELANO AND ALDRICH
ARCHITECTS

CALF AND
BULL PENS

Photos by Robert W. Tebbs

ENTRANCE TO OFFICES
AND VISITORS' GALLERY

Terminal wholesale produce markets are an important development in the distribution of perishable products like vegetables and fruits. So far these markets have been built or controlled by organizations which have usually sought their own ends in the arrangement and construction. Presumably, as the author suggests, the evolution which is in progress in this field is not yet complete, but indications point to the general desirability of a single concentration area for the wholesale and jobbing business of a city which will be accessible to rail and trucking facilities.

In studying conditions in their own communities, architects may find suggestive evidence in the case of the Northern Ohio Food Terminal, Inc., in Cleveland. This project was developed on a tract of 43 acres cleared in the dense slum area of the city. More than 300 buildings were razed and several streets eliminated to provide space for trackage, cold storage, a farmer's market with more than 300 shed stands, and facilities for several wholesale grocery firms, poultry and meat dealers, and dealers in dairy products. Similar results may possibly be obtained elsewhere by architects or architectural groups who are undertaking the promotion of slum clearance and low-cost housing projects.

By WELLS A. SHERMAN

Specialist in Charge of Fruit and Vegetable Division, United States Bureau of Agricultural Economics

THE WHOLESALE PRODUCE MARKET

THE wholesale produce market has a number of variations. If reference is to a structure in a large city the enterprise is likely to be one financed largely, or owned outright, by one or more railroad companies. It may be organized as a terminal company in which private money as well as railroad capital is invested; if the railroad interests are dominant, its plan will almost inevitably seek the direct and easy transfer of fresh fruits and vegetables from railroad cars to shed space suitable for the display and sale of the produce, or to stores or sales rooms of individual receivers.

Trackage must be depressed or structures so elevated that receiving platforms are at car door level. Deliveries, usually from the opposite side of the shed or the opposite end of the store, should be at truck floor levels.

The buildings must facilitate the unloading and release of railroad cars and must, therefore, be relatively long in proportion to width with trackage usually along their entire length. Whether or not the trackage should be inclosed in the building may depend largely upon the climate. If outside temperatures preclude unloading perishables for long periods, a structure covering both delivery tracks and receiving space may be justified. In deciding these important details expense may be offset by added convenience.

Obviously, however, the decision may rest upon the rental obtainable from dealers who are to use space in the terminal for the display or sale of their receipts. The probable number of patrons and the rentals they will pay must be predetermined in any case.

Most of the recent heavy investments in railroad fruit and vegetable terminals have been predicated on agreement by many or most of the carlot receivers in the town to move to the proposed location and to occupy definite space at definite rates. Naturally, the railroads have not cared to aid the business of their competitors—the trucks. Therefore few, if any, of the new railroad terminals contemplate the receipt and resale of goods arriving over the highways.

This situation is almost sure to result in the near future in a cheaper type of building or space arrangement elsewhere in the city for the special accommodation of the wholesale trade in other than rail receipts. If a building is provided for this purpose it is likely to represent some expenditure of public funds and charges are likely to be based on daily occupancy. Relatively little space can be assigned to permanent occupants who can pay fixed rentals.

The products offered in such markets arrive by truck or by farm vehicle without special protection from prevailing temperatures. It follows that most of the business must be done at seasons of the year when the danger of freezing is not great. The total volume may vary tremendously, shrinking to negligible amounts when fresh local produce is out of season. Such a market may be so seasonal in operation that it is closed for several winter months. On the other hand, in sections of the country where local production is possible during the winter, or where products can safely be moved over the highways and exposed for sale in unheated space, the operation of a farmers' and truck-

ers' market may be continuous and perhaps patronized by haulers from great distances if city ordinances or market rules permit.

If the expenditure of public funds is involved there is likely to be a demand that the terminal market provide accommodations for such of the local jobbing trade as may wish to do business therein, and there may be a demand for a retail section. Unless the market is to be purely seasonal the portion which is intended for retail sales must be inclosed and adequately lighted and warmed. Retail business can seldom be confined to the hours required for wholesale transactions. The wholesaler begins his day's work long before consumers are ready to begin their daily marketing. The wholesaler also may have finished his business for the day long before the retailer can close without serious loss of patronage. The introduction of a retail department or section of the terminal immediately complicates the problems both of construction and of operation or administration.

There is always a tendency to permit, if not to encourage, retail selling at any market which has been provided for farmers either wholly or partly at the public expense. Jobbers are frequently not averse to operating in the immediate vicinity of a large retail market center, partly because of the convenience with which their customers (the retailers) can be served and partly because of the added business they derive from consumer buyers of full packages, such as bushels, sacks and barrels.

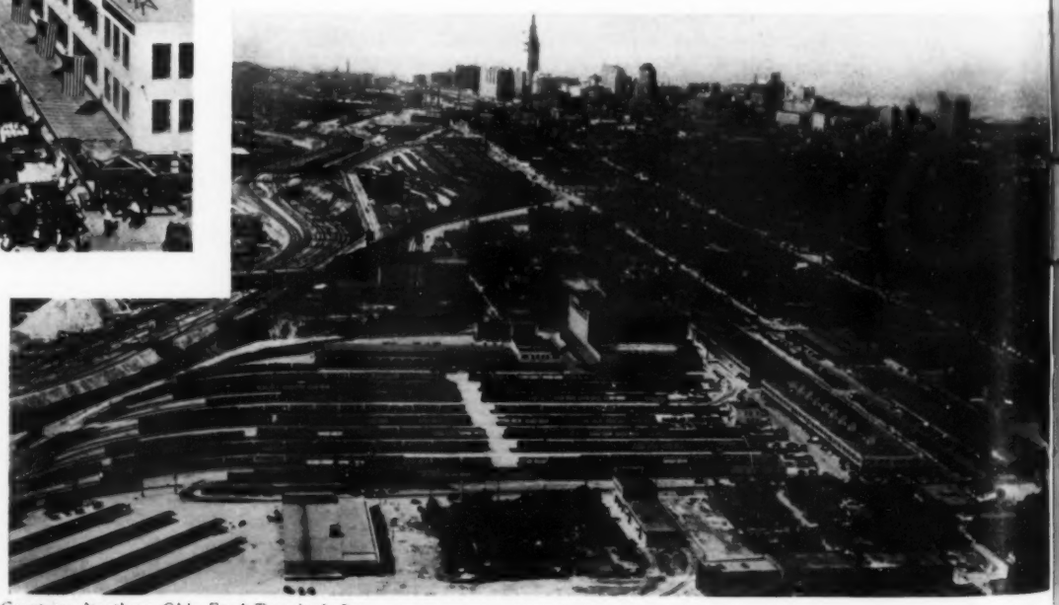
Possibly the size of the city or the population to be served will usually determine the feasibility of a wholesale produce terminal which excludes all retail business. Location, however, is another factor, for it seems to be demonstrated that no large number of consumers can be persuaded to patronize a marketing center located on the outskirts of the city where land is obtainable at prices which will permit the development of a large produce terminal accommodating, as such terminals must eventually do, every type of wholesale traffic in perishable farm products, whether the transportation has been over rails or highways.

WITHIN the relatively recent past there has been an enormous aggregate expenditure by the railroads of the country in wholesale produce terminals. Such construction has sometimes been cooperative but often highly and disastrously competitive. There are now "split markets" at rival railroad terminals in Washington, Philadelphia, Buffalo, Detroit, and Los Angeles. In some other cities perishables have been wholesaled from different competing points for much longer periods.

The Northern Ohio Food Terminal is an example of cooperation on the part of most of the carriers serving the town and there is no seriously competing wholesale terminal in the municipality. However, the arrangement of the Cleveland terminal virtually ignores the existence of the motor truck as a conveyor of wholesale supplies to the city, and this is also largely true of both of the rival railway terminals in Detroit.

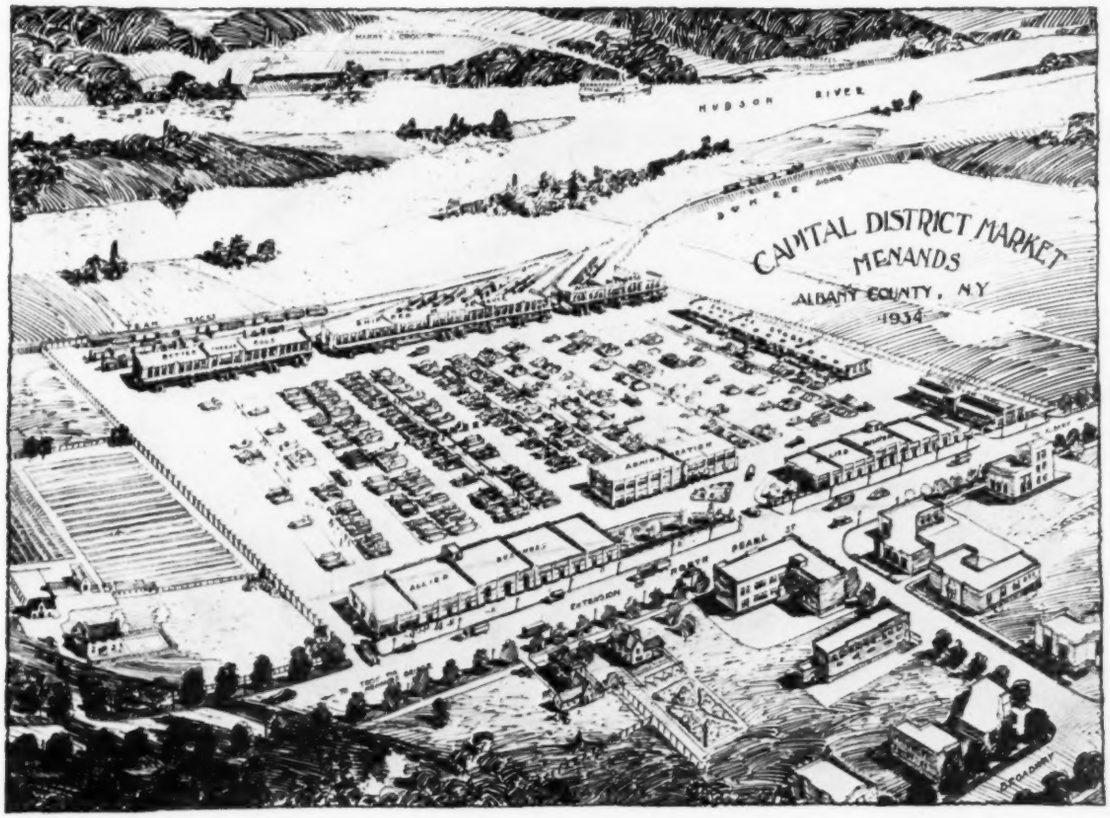
This general disposition on the part of the railroads to ignore the truck and to make no provision for busi-

Left: South Water Market in Chicago, built by jobbers against competition of the chain stores. Nearly all supplies must be hauled from relatively distant railroad sidings but truck deliveries can be made with relative ease.



Right: Northern Ohio Food Terminal in Cleveland. This project occupies 45 acres in what was recently a dense slum area, and provides trackage, cold storages, a farmer's market, and facilities for wholesale dealers.

Courtesy, Northern Ohio Food Terminal, Inc.



A new type of market, the second of a series of six regional markets recommended by the State Department of Agriculture and Markets, and the Cornell Agricultural College for up-State New York. Like the Buffalo Market, the first to be established, this is a private development. It is being built at Menands (between Troy and Albany) by the Capitol District Cooperative, Inc., an organization of 615 growers, as a wholesale food handling center for all the cities in the district, comprising a population of 650,000 persons. The site has an area of 25 acres, with rail connections and a possible water connection.

ness in their terminals in products other than those which they deliver justifies a question as to the sufficiency and permanence of these railroad wholesale terminals as exclusive centers for the distribution of city supplies.

In many cases the chain stores have established their warehouses on private sidings, sometimes quite remote from the railroad produce terminals, thus depriving these terminals of any revenue from the products handled by these chains. This situation also encourages, and in the absence of other wholesale terminal facilities absolutely necessitates, direct store door delivery from trucks selling at wholesale.

In most of our large cities the trucks now bring in such a large proportion of the total fruit and vegetable receipts that it seems inevitable that there must be better provision than has heretofore generally been made for the accommodation of this traffic, and for the sale of trucked-in supplies under more openly competitive conditions. The physical requirements of a market for the accommodation of products coming in and going out on motor vehicles obviously have little in common with those of a typical railway wholesale produce terminal as developed in recent years. It might almost be argued that the railroads have made these enormous investments partly as a gesture of defiance. They appear to have proceeded on assumption that local and trucked-in supplies can never be accumulated at any one spot in sufficient volume to interfere with the wholesale trade in products delivered by rail. Whether this gesture will result in ultimate loss to the carriers is perhaps not yet fully determined.

IF the multimillion-dollar railroad produce terminal is a gesture of defiance toward the truck such an investment as that in the new South Water Market of Chicago must be considered as a gesture of defiance by the old line carlot and jobbing trade against the competition of the chain store group.

This enormous jobbing market, consisting of long solid blocks of concrete cut into wholesale unit stores to which nearly all supplies must be hauled from relatively distant railroad sidings but to which deliveries by trucks from country producing points can be made with relative ease, was financed upon the theory that jobbers could pay for their space on the amortization plan and eventually own their stores, which were planned to meet the specific needs of jobbers and commission men selling the year around from fixed points. It was known from the start that little, if any, chain store business would or could be done at or through

U. S. Dept. of Agriculture

Detroit Union Produce Terminal. The site occupies 38 acres. Ten miles of trackage serve the terminal. The two main buildings are 70 feet wide and 1,100 feet long, giving a display space of more than 100,000 square feet.

these stores. The larger chains are acquiring most of their fruits and vegetables through their own buying organization operating to a large extent at shipping points. The goods are owned by the chains when the cars arrive and economy demands their direct transfer from the car to the retail unit in the simplest possible way. This involves unloading the car at a point controlled exclusively by the chain store organization and arranged to expedite redistribution in mixed truck loads to many unit stores.

There has been little criticism of the physical features of the new South Water Market, which seems to have been well designed for its intended purpose. The decreasing volume of jobbing business, however, has made it impossible for many tenants to continue their amortization contracts. Space in the market is reputedly worth less than when first built. Aside from any question of physical fitness it may be assumed that no trade group will in this generation attempt to finance another such structure. Neither is space likely to be taken at such high rates in any wholesale market which is not also a railroad delivery point.

In the smaller cities, including those having up to at least 250,000 population, the railroad obviously cannot afford produce terminals of the Detroit and Cleveland type. The number of carload deliveries is far too small. Still, such cities, and even groups of cities of smaller size, need every type of wholesale, jobbing, and retail distribution to be found in New York or Chicago. Here the tendency must be toward a distribution center where all kinds of wholesale trade can be conducted with satisfactory provision for the efficient functioning of each. Here we shall have need not for a building usually but for a group of buildings and paved spaces probably with a large percentage of the total area under shed roofs in recognition of the seasonal character of much of the business.

The proportionate investments in inclosed and heated buildings, in paved trading space, and in open sheds may be determined by the interests promoting most vigorously or subscribing most liberally. Even if public money is to be used exclusively, which will be opposed

by many, it is hardly to be expected that equal provision will be made for the vociferous and the less articulate groups which are destined to do business in the market.

EFFORTS extending over several years to develop so-called "regional markets" in New York State where wholesale assembling and distribution could be centered have progressed slowly toward realization. The scheme contemplates ample space set aside for farmers' use with suitable and probably separate provision for the receipt and display of arrivals by rail and truck—all with a view to expediting sale and delivery to independent truckers or to the delivery trucks of storekeepers.

The Capitol District Regional Market was actually opened July 16, although incomplete. It is officially described as a development of 125 acres with options held on additional land for expansion. When opened the administration building had not been erected and the rail connections and wholesale houses were incomplete. The jobbers' stores were all finished and occupied. Enough of the farmers' section had been paved to accommodate eight hundred trucks. Another paved section was provided for trucker-buyers.

The last Legislature created a Regional Market Authority each for Syracuse and for Newburgh in the Lower Hudson Valley. Plans for each of these trading centers have been drawn but thus far neither Authority has been able to secure the financing of its enterprise.

We have noted that experience has shown that city housewives cannot be attracted in large numbers to retail market centers remote from the shopping district. In other words, food buying except at the corner store or at the roadside stand must be a part of a general shopping trip. Whether the wholesale trade in fruits and vegetables can be divorced from other commercial activities and centered where the competing rail and truck carriers are provided with equal facilities remains to be proved. These State-promoted regional markets in New York may furnish the answer. If it is affirmative we may be able to evolve a standard physical development to be varied in detail with latitude, population to be served, proportions of rail and truck receipts, and quantities of local products to be handled.

RAYMOND MATHEWSON HOOD

Raymond Hood, nationally known architect, died at his home, Southfield Point, Stamford, Connecticut, August 14, 1934. He was regarded as one of America's most successful architects. He was born in Pawtucket, Rhode Island, March 29, 1881, attended Brown University and was graduated from Massachusetts Institute of Technology in 1903. He later studied in Paris, receiving his diploma from the Ecole des Beaux-Arts in 1911. His first job was with Henry Hornbostel in Pittsburgh. In 1914 he came to New York and set up his office on a floor of a brownstone walkup in 42nd Street. Between scant commissions he hired out his services as a draftsman until his first notable success in winning the international competition for the design of the Tribune Tower, Chicago, 1922. The award was made to Mr. Hood as an associate with John Mead Howells. He designed and built the American Radiator Building and established his enlarged office in its tower. His later work includes the Daily News Building, the McGraw-Hill Building and he was one of the three collaborating architects for Rockefeller Center.

DAIRY AND MEAT DEPARTMENTS — Workroom and refrigerators incorporated into the departments on sales floor; aisle increased to 10 feet so as to accommodate week-end crowds.

1

2

DELICATESSEN DEPARTMENT — Counters and lower back wall are faced with green enamel plates with black trim.

SUPER-MARKET MOVEMENT — The Big Bear Market at Paterson, New Jersey, is one of three recently opened great food centers in New Jersey. The first of the Big Bear group opened in Jersey City, December 8, 1932. By 7 o'clock in the morning of the opening day there were 2,000 customers waiting at the doors. Over half a million dollars had been taken in within the opening six weeks. It is reported that about 50 per cent of the shoppers are men, many unemployed, who drive many miles for their food supplies. It is estimated that the average per person sale is between $1.50 and $2.00. The super-markets are operated on the principle of selling a percentage of goods below cost which accounts for such prices, at the time of opening, as the following: pork and beans, 3c a can: corn flakes, 5c a package: salmon, tall can, 5c; rolled oats, large package, 3c: onions and sweet potatoes were advertised at 1c a pound. (See, also, article on Jersey City Super-Market by B. Sumner Gruzen, Architect, in The Architectural Record, July, 1934, pages 43-48.)

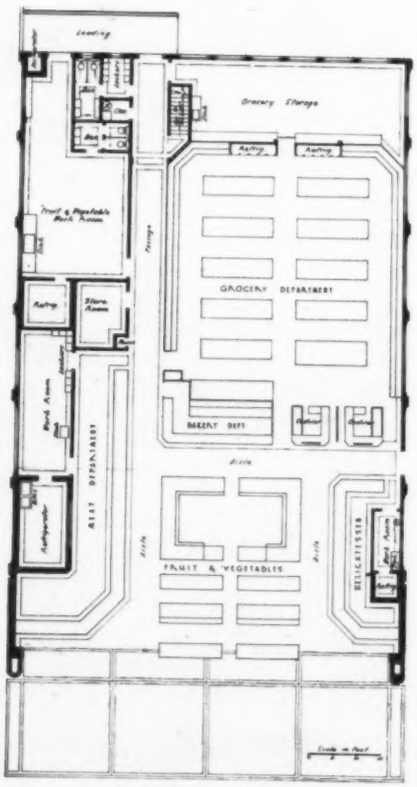
1. Showing refreshment, cracker, cosmetic, novelties and tobacco departments. Aisles are 6 feet transversely, 8 feet longitudinally. Note entrance at right leading to auto supplies and shoe departments.

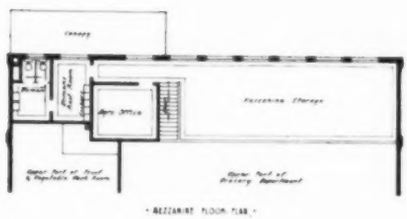
2. Grocery Departments—Shelves are used at perimeter of department, a practice not adopted if space permits half counters. (See Jersey City Shopping Center, The Architectural Record, July, 1934, page 45.) Customers show a slight resistance to taking things from a neatly arranged shelf and to reaching up for merchandise. Aisles are 8 feet longitudinally, 6 feet transversely. The lighting, with 15-17½ ft. candles by reflectors every 10 feet, is very satisfactory.

BIG BEAR SHOPPING CENTER — A SUPER-MARKET . . . . PATERSON, NEW JERSEY
B. SUMNER GRUZEN, ARCHITECT

Associated Photographers, Inc.

INTERIOR OF THRIFTY MART





MEZZANINE FLOOR PLAN

This food market is a new type with floor plan to accommodate both counter- and self-service. It is reported that the day of the "drive-in" market is passing in Los Angeles. Markets are now built up to the street line and are of the "super-market" type. With this latter type, space to park automobiles is generally provided at the side of the store. The location of departments has become an exact science. In almost all cases the entire width of the store is free of column supports. There are also no interior supports to obstruct the floor plan.

THRIFTY MART, LOS ANGELES, CALIFORNIA
MORGAN, WALLS AND CLEMENTS, ARCHITECTS

THE ARCHITECTURAL RECORD, SEPTEMBER 1934

TECHNICAL NEWS AND RESEARCH

LIGHTING OF SMALL STORES

BY
HENRY L. LOGAN

THE LIGHTING OF SMALL STORES

By HENRY L. LOGAN
CONSULTING ELECTRICAL ENGINEER

THE function of small stores is to sell merchandise. This function is best exercised if all the elements of the store contribute to it. Nothing should be permitted to compete with the merchandise for the buyer's attention. Fittings, surroundings and decorations, chosen for the sake of their own beauty, and without reference to the primary purpose of the store, will inevitably compete with the merchandise and weaken its appeal.

Stating this principle more directly, the merchandise should be the paramount feature in the field of view. To achieve this, the light should fall on the merchandise *first* and then be reflected into the traffic areas and the store generally. This lighting principle is simply the extension to the store interior of the same lighting methods that have long proved successful when used in show windows, but with such modifications as common sense dictates.

BRIGHTNESS SCALE

Scientific lighting of small stores (interiors and windows) implies an ascending scale of brightness in the field of vision presented by the store or window, with the merchandise occupying the peak of the scale. Much present-day store and window lighting brings about the reverse condition with either the lighting equipment itself, or the upper part of the store or window, at the top of the brightness scale and the merchandise somewhere near the bottom.

In the case of store interiors, light sent to the ceiling first becomes the brightest feature. It is the first to attract the customer's eyes. It "optically" depresses the merchandise and leads to an unnecessary increase in wattage in the show cases if effort is made to counterbalance the brightness.

If general lighting is used from ceiling or suspended fixtures, the lighting units are highest in the scale of brightness and attract attention, usurping the place of the goods in the customer's field of view. Further, this common method treats the goods as part of the general background, lighted no more favorably than the walls, the aisles and the ceiling, with the result that even the most skillful arrangement of merchandise takes on some of the characteristics of a confusion pattern.

Controlled direct lighting is the most effective method by which the merchandise can be given optical dominance. Fortunately it is also the least costly way to transfer a given amount of light from the source to the field of view.

WINDOW LIGHTING

All standard makes of show window lighting equipment are the "controlled direct lighting" type. All manufacturers provide complete installation details, and as the physical dimensions of the various kinds of units available are much the same the architect finds that the principal factor he has to determine is the connected load so he can make proper electrical provision.

LIGHT INTENSITY

The connected load depends upon the number of foot-candles of light the merchant needs to secure the maximum sales return from the windows. The eye operates fairly efficiently at levels about equal to indoor daylight (20 to 100 foot-candles). For effective vision *only*, illumination on light goods displays should therefore be above 30 foot-candles, and on dark colored displays above 100 foot-candles (allowing for absorption).

However, competition of neighboring windows is usually the governing factor. Figure 1 shows the increase in percentage of passers-by stopped, with various increases in window lighting intensities above the lighting of neighboring shops when the lighting has been tripled over competition. A conservative rule is to provide for double the lighting intensities of competition.

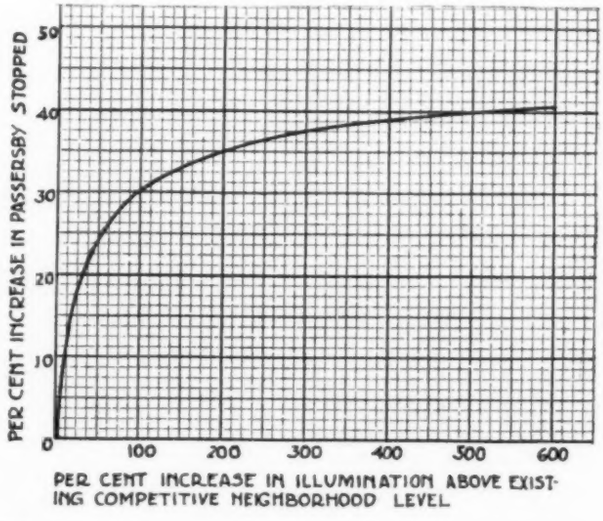


FIG. 1
CHART INDICATING THE POWER OF STORE LIGHTING TO ATTRACT PASSERS-BY.

Where a motor trade is an important source of business and neighboring competition is absent or negligible, the illumination must be sufficient to permit the window to tell its story in six seconds, the maximum time it will be within view of the passengers of the car when the approach and retreat views are unobstructed. This requires a minimum of 100 foot-candles which can be secured with 150- to 300-watt lamps per running foot of window, depending upon the efficiency of the equipment selected, and the size of the window. (In general, shallow windows, 100 watt; medium windows, 200 watt; deep windows, 300 watt.)

Street lights should be taken into consideration since often the windows can be so arranged that obscuring reflections are minimized if this item is taken care of in the planning stage.

SUNLIGHT

The sun often effectively "boards up" windows by causing such bright reflections of opposite windows, traffic and passers-by that for hours during the daytime the windows are nearly useless. This can only be fully overcome by measuring the brightness of the reflections and putting *more light* in the window. Sometimes this calls for fantastic levels of light and is simply out of the question. Actual experiments have shown, however, that most daylight interference can be overcome by the use of 500 watts per running foot of show window in efficient equipment.

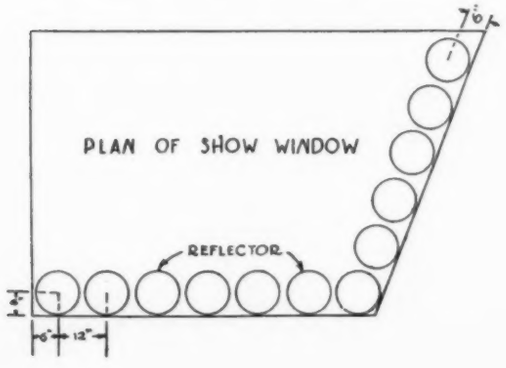
The new double filament lamp, now available, makes this feasible. It has a 200-watt and a 300-watt filament. Either filament can be burnt separately or they can both be lighted simultaneously. During the hours of high daylight both filaments can be switched on and at night only the one that gives the proper lighting level for night conditions.

SPACING OF OVERHEAD EQUIPMENT

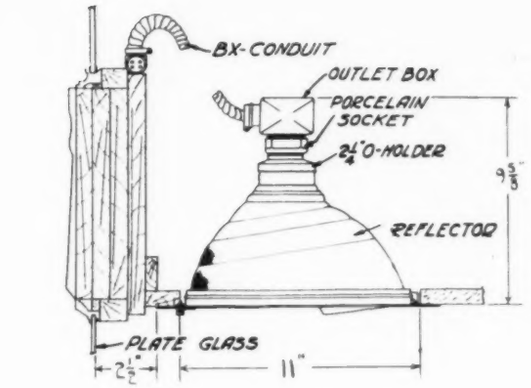
Reflectors should not be more than 18 inches apart and 12 inches where possible. In general it is preferable to use many reflectors and smaller lamps than vice versa. Diffusion is better and the "quality" of the lighting higher when produced by many light sources. In addition, numerous light sources permit the use of step wiring with its great flexibility.

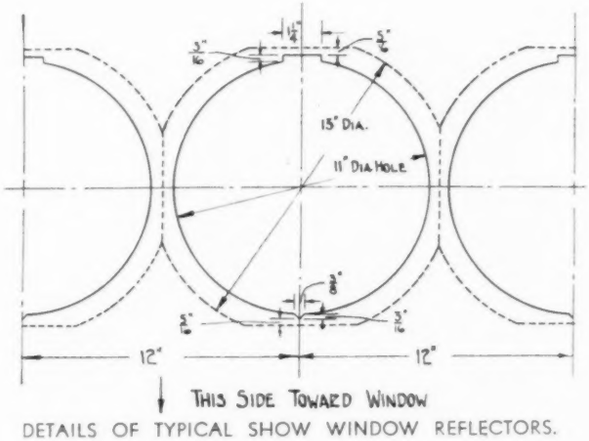
FOOTLIGHTS

These are a helpful adjunct to the overhead lighting. When used the wattage per running foot of window should be not more than one-third, and preferably one-quarter that of the overhead lighting.



IN SHOW WINDOW LIGHTING THE ARCHITECT MUST DETERMINE THE REQUIRED CONNECTED LOAD FOR DESIRED DISPLAY ILLUMINATION.





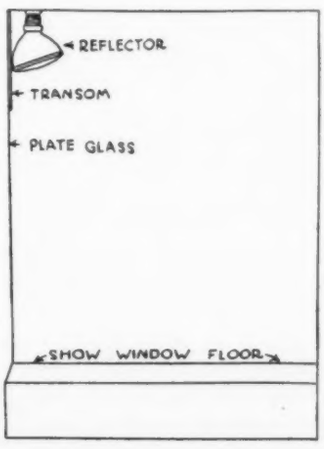
DETAILS OF TYPICAL SHOW WINDOW REFLECTORS.

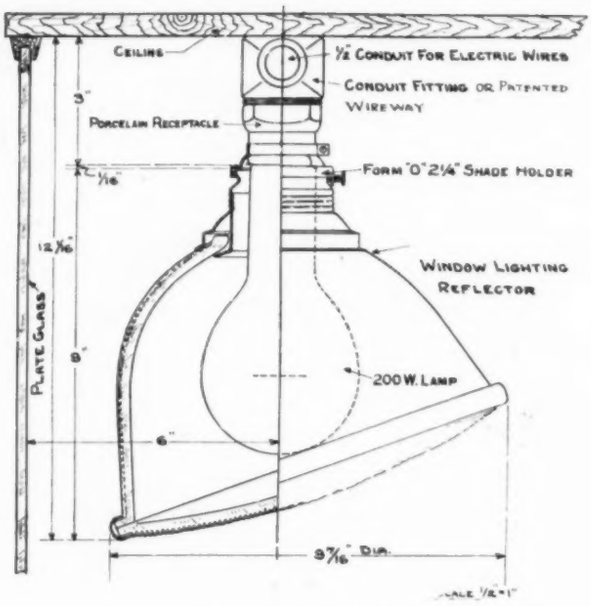
SIDE LIGHTING

Side lighting is now coming into use. This puts the lighting equipment up the sides of the windows instead of overhead. It has the advantage of putting the maximum illumination on the display at an angle normal to vision. It prevents the use of a long continuous window (which may be a gain), and forces its breakup into a number of completely separated windows, with wide vertical valances to hide the equipment.

BACKGROUND LIGHTING

Separate lighting of the background from its foot has an attention-arresting value and has been used on occasion, but it has not become popular because of its tendency to subordinate the display to the background. It has no proved sales value.





STANDARD WINDOW REFLECTOR OF CLOSED TYPE.

COLORED LIGHTING

Colored lighting has a sales advantage on festival occasions and on special displays. As a steady diet it invariably develops into a sales handicap. If extra outlets are provided on separate circuits in each window, as previously recommended, sufficient provision will have been made.

AUXILIARY EQUIPMENT

Each window should be provided with at least two full circuits to take care of spotlights, animated displays and festival lighting, unless they are of the "cabinet" type popular with jewelers and some specialty stores.

A time switch will make it possible to run the lights during the most effective window display hours when the store is closed.

SIGNS

Forty per cent of all small stores have illuminated signs. Confectionery stores, drug stores and restaurants are invariably equipped with illuminated signs. Their value as a sales aid has been thoroughly demonstrated. Sign designing is a special field with its own experts. The research departments of the lamp companies publish monographs carefully treating every phase of the subject in detail, which the architect would be well advised to consult.

Where the upper part of the window is used for a sign, window reflectors that will transmit some light directly to the sign should be selected.

WINDOW BACKS

The national survey of small stores conducted by members of the Illuminating Engineering Society each ten years reveals that at present (1932 survey) 60 per cent of all small stores have window backs, of which one-half are of the "boxed-in" or solid type. The survey brings out the fact that backless windows are customary in grocery, clothing repair stores and barber shops. Bakeries, confectionaries, delicatessen stores, meat markets, eating places, drug and jewelry stores showed a preponderance of transparent, glass backs that gave some view of the store interior from the window.

In both backless and glass-backed windows the lighting equipment should be protected by glare shields, otherwise it will be an intolerable nuisance to the workers in the store and an annoyance to the customers.

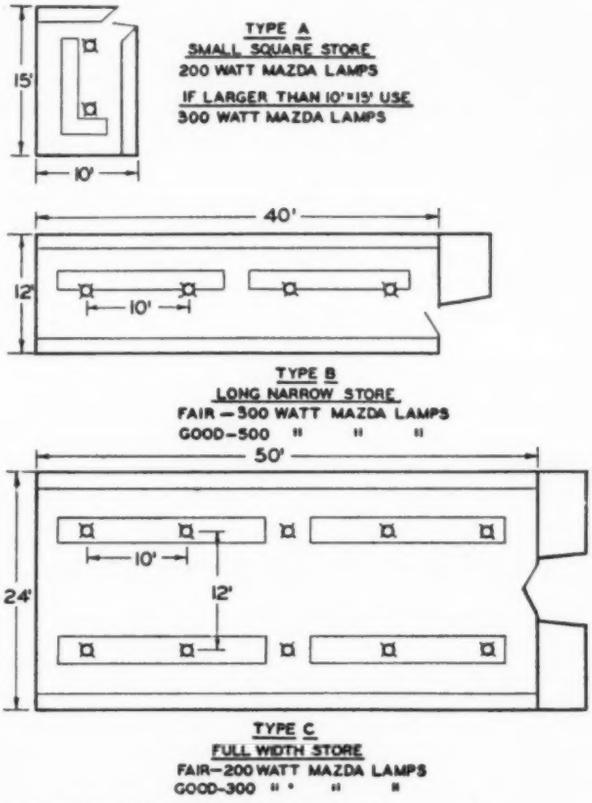
BACKGROUNDS

It is the considered opinion of leading display managers that light colored backgrounds of neutral tone and matte finish give the greatest flexibility, and are the easiest to dress against. Diffusion from them will also help to tone down confusion shadows.

VALANCE

Where exposed overhead equipment is used a valance is desirable to prevent the bright and unsightly mechanisms from detracting from the display. It is also best to hide flush equipment with a valance because the "spill" light from the equipment tends to compete with the display. Where the equipment is located be-

"THE AMOUNT OF LIGHT IN THE STORE DEPENDS UPON THE WINDOW LIGHTING. IF A PROPER BALANCE IS NOT ARRANGED BETWEEN THESE TWO, THE BEST WINDOW LIGHTING MAY FAIL ITS PURPOSE. THERE ARE TESTS ON RECORD PROVING THAT WHEN THE WINDOW LIGHTING HAS BEEN RAISED TO A LEVEL DETERMINED TO STIMULATE PASSERS-BY TO ENTER THE STORE, THE PASSERS-BY HAVE FAILED TO ENTER DUE TO THE DIMNESS OF THE STORE INTERIOR."



COURTESY, ILLUMINATING ENGINEERING SOCIETY.

SUGGESTED LIGHTING ARRANGEMENT TO PROVIDE RECOMMENDED LEVELS OF ILLUMINATION IN TYPICAL SMALL STORES.

HIGH VISIBILITY. CONTROLLED LIGHT DIRECTED AT THE MERCHANDISE IN A MODEL FOOD STORE, NEW YORK CITY

hind an opaque feature of the window that sufficiently hides it, such as a deep transom bar, an additional valance is unnecessary.

WINDOW CURTAINS

Where window curtains are used, minimum space should be taken up by them. If space is not conserved at this point in order to permit the lighting to be as near the glass as possible, the equipment will be behind a portion of the display when the window is dressed close to the glass. This will reverse the shadows on the front objects and render them indistinct.

ISLAND WINDOWS

Island windows are difficult to dress and to light. When used they must be dressed and lighted from all sides. Anti-glare shields on the lighting equipment are necessary to prevent the lights on the far side of the island from obscuring vision on the near side. They also require valances of about twice the normal depth, unless they are unusually high with the lighting units at such an angle to the observer's direction of view that they cannot be included in it.

VENTILATION

All show windows should be ventilated. This avoids softening of wax figures because of accumulating heat from the lamps in the confined space, and other damage to the display. Ventilation makes working conditions for the display men more tolerable (an important factor in the larger stores where there is much window space to dress), and it controls steaming and frosting of the windows in winter.

IDEAL DEPTH OF WINDOWS

The ideal depth of windows from a lighting standpoint is not less than one-third, nor more than two-thirds the height to the lighting equipment. This also covers the range of effective visual inspection considering that as much of the window as possible should be visible on the approach.

STORE INTERIORS

MINIMUM DESIRABLE LIGHTING LEVELS FOR STORE INTERIORS

Type of Space	*Foot-Candles on Display (or Work)*	*Foot-Candles in Self-Lighted Show Cases*	*Foot-Candles in Aisles and Traffic Areas*
Automobile Showrooms	40	..	40
Barber Shops	20	40	5
Book Stores	15	30	5
Candy Stores	20	40	10
Clothing Stores	30	60	10
Drug Stores	20	40	10
Electric Shops	40	80	10
Floor Coverings	50	100	15
Florist Shops	20	40	5
Food Stores	20	40	5
Furniture Stores	10	20	5
Gift Shops	40	80	10
Hairdressers Shops	20	40	5
Hardware Stores	15	30	5
Hat Stores	30	60	10
Jewelry Stores	40	80	10
Liquor Stores	10	20	5
Millinery Stores	20	40	10
Music Stores	15	30	5
Shoe Stores	30	60	10
Specialty Shops	(depends upon particular case)		
Tobacco Stores	20	40	5
Wall Coverings	30	60	10

CONNECTED LOAD

The connected lighting load can be determined by multiplying the watts per square foot by the floor area. (The watts per square foot, for the intensities recommended in the preceding table, are given in the table following.) To this should be added the wattage in the self-illuminated show cases, the wattage of inside signs and all other miscellaneous illuminating equipment.

WATTS PER SQUARE FOOT OF FLOOR AREA

Intensity in Foot-Candles	*Controlled* Direct Lighting*	*Semi-Ind.** Lighting*	*Indirect*** Lighting*
10	1.7	2	3
15	2.5	3	4.5
20	3.4	4	6
30	4.3	5.5	7.5
40	5.7	7.3	10
50	7.0	9.2	12.5

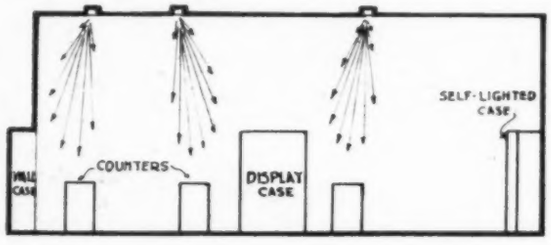
*This form of lighting is independent of surroundings.
**Figures based on light surroundings, use of higher wattage, higher efficiency lamps for the higher intensities and functional fixtures.
***Ditto. If coves are used the above figures may be increased by four "times."

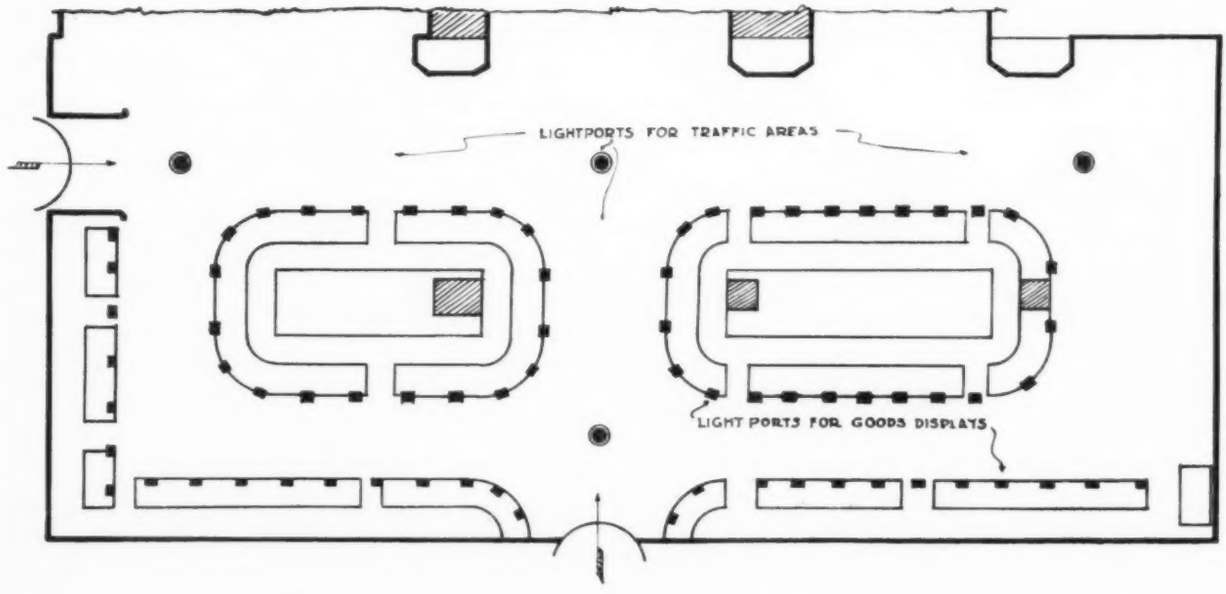
CIRCUITS

The maximum connected load permitted on ordinary branch lighting circuits is 1,320 watts. The number of circuits will depend upon the size of lamps used. The lighting fixtures should be wired alternately on the circuits so that in case of a circuit going dead only half the lamps in that part of the store go out. Separate circuits should be provided to the show cases. In addition each six feet of counter should be provided with a convenience outlet for the operation of animated counter displays, display lamps and other electrical purposes.

SWITCHING

All lamps of 500 watts or more should be switched individually. When possible it is desirable to switch all lamps of 200 watts or more individually. Wall switches are recommended. Pull chains are unsightly, get out of order easily and require considerable maintenance. Switches should be in a place quickly accessible but concealed from the public. In small stores one light should have a separate switch apart from the rest for cleanup purposes. In larger stores one light for every 800 square feet should be tied together on a separate circuit or circuits for cleanup purposes with separate switches specially located.





PLAN AND SECTION ILLUSTRATING RELATION OF LIGHT PORTS TO SALES COUNTERS, CASES AND AISLES. WALLACH'S STORE, NEW YORK CITY. SEE STORE INTERIOR ON OPPOSITE PAGE.

CEILING LIGHTS LOCATED FOR GOODS DISPLAY, SEE PLAN, PAGE 212.
WALLACH'S STORE, EMPIRE STATE BUILDING, NEW YORK
STARRETT AND VAN VLECK, ARCHITECTS

LIGHTING OUTLETS

The number of lighting outlets will vary with the type of system selected, controlled direct lighting requiring the most and indirect lighting with functional fixtures needing the least. Individual stores vary so widely, no exact guide can be given.

However, controlled direct lighting sources ("light ports") should be located at the ceiling, directly over the customer's edge of the counter and be spaced one-quarter of the mounting height above the counter apart, or 30 inches, whichever is the largest. The lamp size will vary from 100 watts per light port for 15 foot-candles (average ceiling heights), to 300 watts for 50 foot-candles.

Arrangement of outlets for standard direct and semi-indirect systems is given on page 210, the lamp sizes being for direct lighting.

For indirect lighting, Type A store would take one outlet only in the center of the ceiling, Type B three outlets in place of the four shown, and Type C two to three outlets in one row, depending on the size of lamp used and the ceiling height. Low ceilings force the use of smaller units with smaller lamps and more of them.

METHOD OF LIGHTING

The application of controlled direct lighting to store interiors is best illustrated by a few examples. The recent installation in the Wallach's store, Empire State Building, New York City, is of the "controlled direct" type. It is shown on page 213, with a simplified plan and an explanatory lighting diagram on page 212. The "light ports" are located flush in the ceiling and reflect the plan of the fittings. They are of the lens type and bend the light towards the merchandise on the shelves and counters. At all angles of possible observation by customers they are of low brightness, the light going to the field of view instead of into the observer's eyes.

Page 215 shows the same principle applied to the

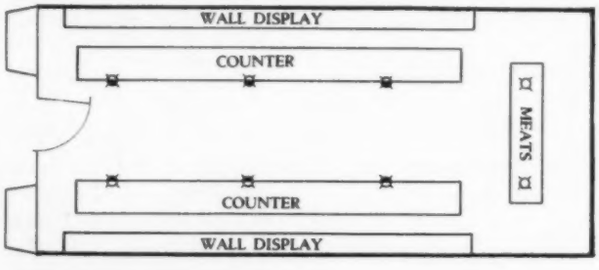
LIGHT IN THIS ROADSIDE STAND IS DIRECTED DOWNWARD FROM FLUSH CEILING PARTS ON TO THE SERVICE AND TABLE AREAS.

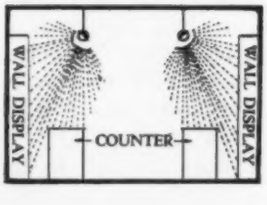
INTERIOR OF "DUTCHLAND FARMS" ROADSIDE STAND

lighting of the typical country chain food store. In this case the equipment follows tradition in that it is suspended from the ceiling, but it is simplified in form and so designed that it emits light only in the direction of the merchandise. It replaced standard equipment that used one-third more current and delivered only half as much light on the merchandise. Page 211 is a close-up of similar equipment in another food store showing the manner in which this method of lighting makes the display stand out. Page 215 illustrates similar lighting of an independent food store just opened in Elmira, New York. Special attention is called to the lighting of the flat central displays where a variant of the side lighting units is used, directing all the light downward. A plan and section of a typical store showing the relation of such light control units to its physical features is given on page 214.

Page 214 shows the interior of a typical "Dutchland Farms" roadside stand, illuminated by "light ports."

Page 215 shows "light ports" in the ceiling of a jewelry store pouring down directed light with scientific precision on a show case in which diamonds and other jewels are displayed. The ceiling of the show case to the right is a continuous "light port" emphasizing the silverware on exhibition.





Typical store plan with section showing direct illumination of counters and small display

Controlled direct lighting is best suited to all types of small stores that display and sell packaged merchandise or stack their merchandise vertically. The following are included in this class:

Book stores.
Candy stores.
Clothing stores.
Drug stores.
Food stores.
Gift shops.
Hardware stores.
Hat stores.
Liquor stores.
Music stores.
Shoe stores.
Tobacco stores.

Such lighting is best for jewelry stores because diamonds and gems depend upon their color and sparkle for their appeal, which is at a maximum under brilliant direct lighting.

Applied in the form of show case lighting it is a desirable auxiliary to semi-indirect or indirect general lighting in the following types:

Electric Shops.
Florists.
Hairdressers.
Millinery shops.
Specialty shops.

It is the most effective way of lighting merchandise displayed in large vertical planes, such as floor and wall coverings.

Semi-indirect lighting is best suited to stores having large objects on floor display, such as automobile showrooms, electric shops; to some specialty shops, such as stores selling large musical instruments and notions stores displaying all articles on flat counters.

Indirect lighting fits the service stores (in the public area, the work area being an industrial lighting problem). Such are barber shops, tailors, furriers, cleaning and dyeing establishments, opticians' and many specialty shops. It is also best in those shops (for example, millinery), where the merchandise is not on general display, but is brought out, one item at a time, and

LIGHTING OF A TYPICAL COUNTRY CHAIN FOOD STORE. IN THIS CASE THE EQUIPMENT FOLLOWS TRADITION, IN IN THAT IT IS SUSPENDED FROM THE CEILING, BUT IT IS SIMPLIFIED IN FORM AND LIGHT IS EMITTED ONLY IN THE DIRECTION OF THE MERCHANDISE.

SPECIAL INDIRECT AND DIFFUSED LIGHTING IS REQUIRED FOR THE OPTICAL STORE. A SIMPLE FORM OF INDIRECT LUMINAIRE IS SHOWN HERE.

DIRECT ILLUMINATION OF MARK TWAIN FOOD MARKET INTERIOR, ELMIRA, NEW YORK. HASKELL AND CONSIDINE, ARCHITECTS. ATTENTION IS CALLED TO THE LIGHTING OF THE FLAT CENTRAL DISPLAYS.

tried on under strong local lighting provided at the spot where the merchandise is inspected.

An optician's shop, lighted by a simple form of functional indirect luminaire is shown on page 215. Here most of the customer's time is spent sitting down, waiting for service. The only critical use he has to make of his eyes is when he selects the type of eyeglass fittings he prefers, which is done leisurely and not under the time pressure that accompanies purchases of most goods.

MAINTENANCE OF LIGHTING SYSTEM

Since the cost (average for the country) of a 300-watt lamp, per annum, in the average store is $240 per year it is easy to realize the value of proper maintenance of lighting fixtures. A comparatively slight accumulation of dirt will cut the light in half and therefore double its cost. A store burning ten 300-watt lamps can easily find itself paying $1,200 a year for the privilege of keeping a film of dirt on its lighting equipment, not to speak of the sales loss as a result of the fall from a productive lighting level to a mere comfort level.

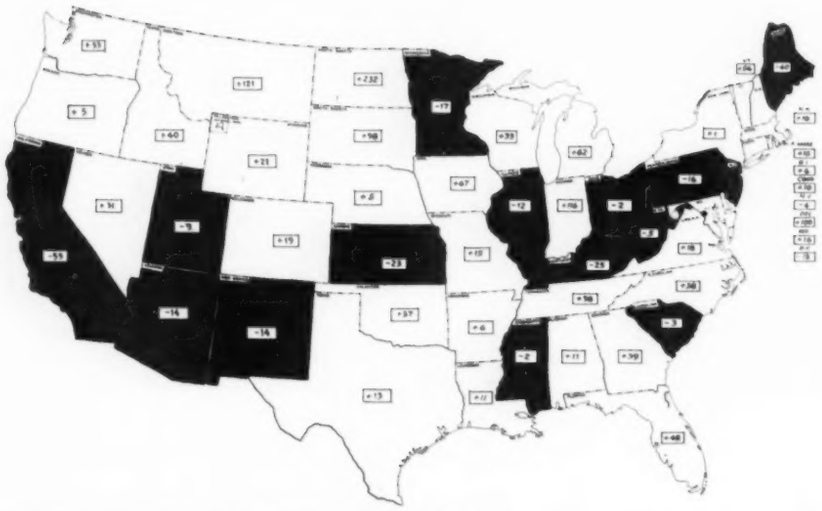
The architect can help minimize losses of this kind by avoiding open lighting equipment which, if of the indirect or semi-indirect type, accumulate dirt in the bowl and on the neck of the lamp. (This dirt tends to bake on because of the heat of the lamp and is always so distributed on the reflecting and transmitting surfaces that much of the light has to pass through it twice before it reaches an outside surface); by locating the equipment so that it is easily accessible for cleaning; by choosing equipment that gives easy access to the lamp and does not require excessive labor for cleaning; by selecting equipment that is ruggedly built and will not require replacement of parts from time to time because of failure; and by giving the interior of the store durable light reflecting finishes where the surrounding are a cooperative feature of the system selected.

JEWELRY STORE WITH "LIGHT PORTS" AT CEILING. THESE DIRECT LIGHT ON A SHOW CASE IN WHICH DIAMONDS AND OTHER JEWELS ARE DISPLAYED. THE CEILING OF THE SHOW CASE TO THE RIGHT IS A CONTINUOUS "LIGHT PORT" EMPHASIZING THE SILVERWARE ON EXHIBITION.

Davis

BUILDING TRENDS AND OUTLOOK

BY L. SETH SCHNITMAN
CHIEF STATISTICIAN
F. W. DODGE CORPORATION



BUILDING DURING 12 MONTHS — August, 1933 - July, 1934, INCLUSIVE. Corresponding twelve months ended June, 1933, taken as base. SHADED AREA: BELOW BASE. UNSHADED AREA: ABOVE BASE. Figures denote percentage change from base. Floor space for new building contracts, 37 states east of the Rocky Mountains. Permit valuations for Rocky Mountain and Pacific coast states. Map, copyright American Map Co., N. Y. Authorized reproduction No. 5025.

RESIDENTIAL BUILDING LOSES GROUND

Construction awards through July continued above the corresponding monthly totals of last year. The July volume of $119,696,800 for the 37 eastern states contrasts with $82,554,400 for July, 1933, and $127,076,700 for June of this year.

For the elapsed months of 1934 construction awards amounted to $973,820,000 for the 37 eastern states as against $514,667,800 for the corresponding seven months of 1933. The cumulative gain over 1933, amounting to about 90 per cent, was almost entirely due to the rise in publicly-financed construction projects growing out of the PWA program. This class of work alone totaled $624,263,200, while for the corresponding 7 months of last year publicly-financed contracts amounted to only $181,549,500.

Residential building contracts let during July fell below the respective totals for either the preceding month or July, 1933. For the year to date, however, residential awards are still above the total for the corresponding seven months of 1933; the gain amounts to about 11 per cent.

Non-residential building awards totaled $60,751,400 for July against $43,104,900 for June and $39,983,200 for July of last year. The cumulative total for this class of construction amounted to $339,151,800 as against $224,376,800 for the corresponding seven months of 1933.

Public works contracts during July fell below the volume of June, but were more than twice as large as the volume reported in July of last year. For the year to date contracts for public works amounted to $406,060,000 as against only $121,094,300 for the corresponding seven months of 1933.

Public utilities awards in July were smaller than in June, but were almost twice as large as in July, 1933. For the year to date contracts for this class of construction amounting to $76,982,800, were more than twice as great as in the like seven-month period of 1933.

Contemplated construction reported during July totaled $243,675,500 as against $313,882,300 for June and $447,678,300 for July of last year. Losses in proposed new construction from last year's totals were pronounced in each of the four major classes of work, but the reported decline in residential planning was the most discouraging.

MATERIAL PRICE MEASURING ROD

F. W. DODGE CORPORATION
COMPOSITE PRICES

MATERIAL	This Month	Month Ago	Year Ago
Portland Cement . .	$2.25	$2.25	$2.10
Common Brick	14.83	14.84	11.85
Structural Steel . .	1.65	1.65	1.60
Lumber	16.35	16.40	15.65

The prices in this tabulation enable one to visualize at a glance the main trend of the material market. Their significance does not extend beyond that point, and the explanation should be read carefully. Prices given in this comparison are composite and do not in all cases refer to one item. For instance, the price of structural steel is the composite of prices of shapes and plates f.o.b. Pittsburgh; the price of lumber is a composite of five items of Southern pine and five items of Douglas fir f.o.b. mill; the price of cement is a composite of prices in fourteen different cities per barrel, carload lots, to contractors; price of brick is composite in fourteen cities per M. delivered on the job. °Revised.

First

IN QUALITY PERFORMANCE VALUE

MODEL K
Made in 5 Sizes
Maximum Capacity
3600 Gals. per Hour
Retail Price
(Size No. 1K)
$65.00
F.O.B. Detroit

THE architect who specifies a Penberthy Automatic Electric Sump Pump for the removal of seepage water knows that his client is getting the best that money can buy—but at competitive prices. Penberthy Pumps are ruggedly constructed of copper and bronze throughout—they cannot rust. They are carried in stock for immediate delivery by plumbing wholesalers everywhere.

YOU CANNOT SPECIFY A BETTER SUMP PUMP

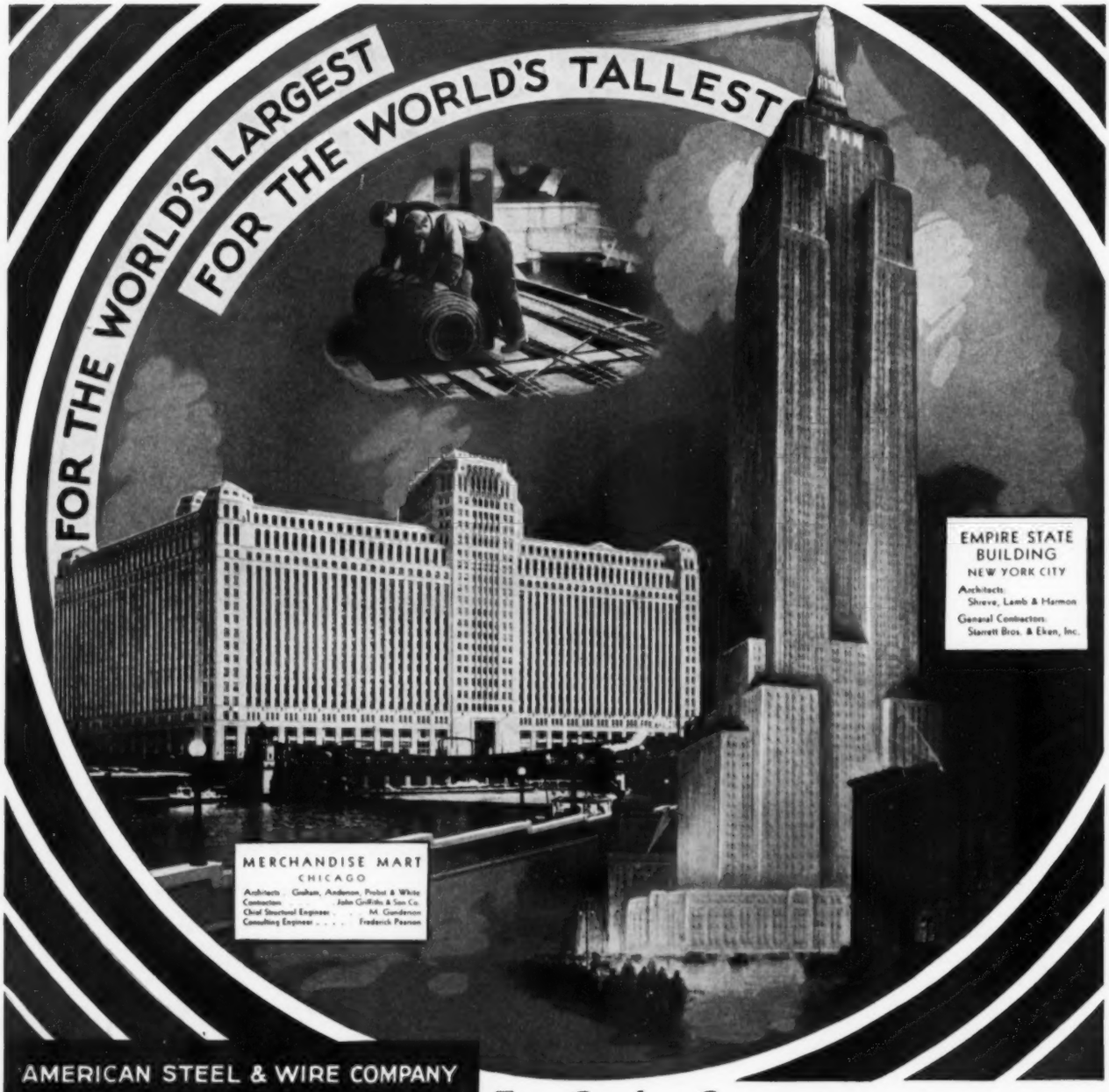
•

PENBERTHY INJECTOR COMPANY
Manufacturers of Quality Products Since 1886
DETROIT, MICH. - - - WINDSOR, ONT.

PENBERTHY PRODUCTS

MODEL 33
Made in 1 Size Only
Maximum Capacity
1400 Gals. per Hour
Retail Price
$39.50
F.O.B. Detroit

PENBERTHY SUMP PUMPS REMOVE SEEPAGE WATER


FOR THE WORLD'S LARGEST
FOR THE WORLD'S TALLEST
EMPIRE STATE BUILDING
NEW YORK CITY
Architects: Shreve, Lamb & Harmon
General Contractors: Starrett Bros. & Eken, Inc.
MERCHANDISE MART
CHICAGO
Architects: Graham, Anderson, Probst & White
Contractors: John Griffiths & Son Co.
Chief Structural Engineer: M. Gunderson
Consulting Engineer: Frederick Pearson

AMERICAN STEEL & WIRE COMPANY

WIRE FABRIC

THE STEEL BACKBONE OF CONCRETE

For Cinder Concrete or Stone Concrete Floor Arches

Building achievements of the epoch—to challenge time for decades to come. It is significant that these structures employ concrete floor arches. The Empire State Building floors are of the Cinder Concrete Arch type and the Merchandise Mart floors of Stone Concrete.

Doubly significant is the fact that American Steel & Wire Company Wire Fabric was chosen for reinforcement. Note—in the action photograph above—how easily this Wire Fabric is installed; one of the many reasons why it was specified.

1831 — MORE THAN 100 YEARS of PROGRESS in WIRE MAKING — 1934

AMERICAN STEEL & WIRE COMPANY

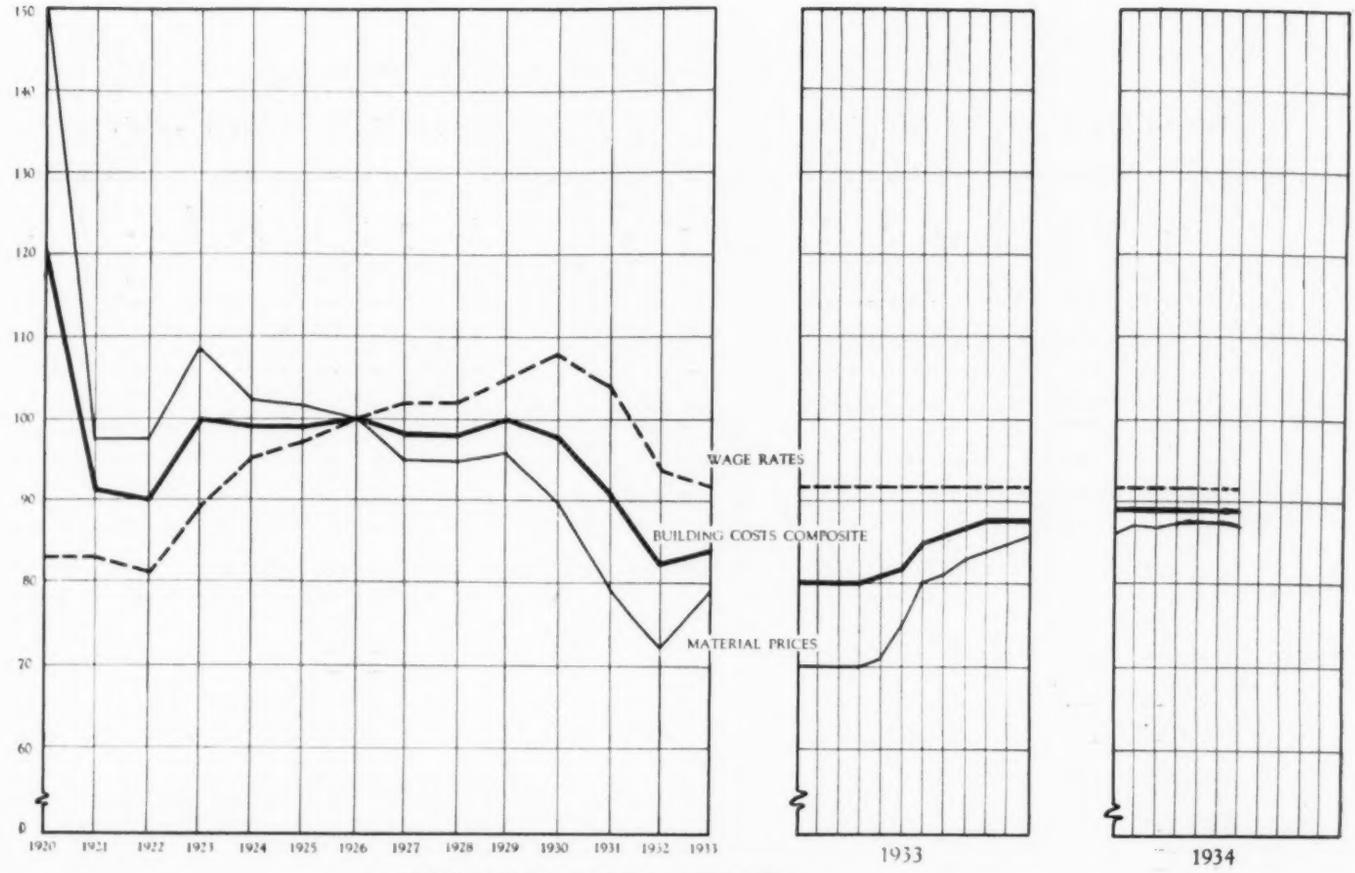
208 South La Salle Street, Chicago
94 Grove Street, Worcester

SUBSIDIARY OF UNITED STATES STEEL CORPORATION
AND ALL PRINCIPAL CITIES

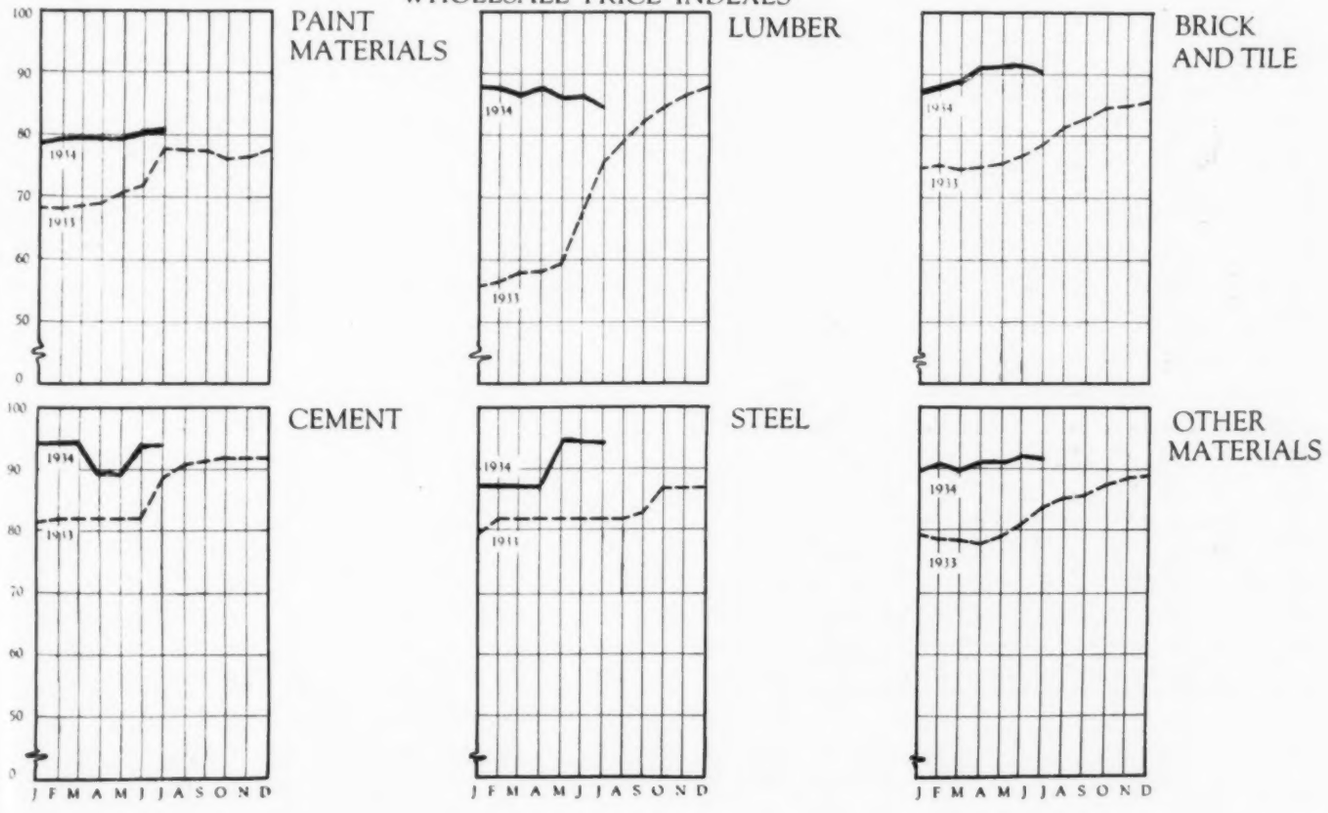
Empire State Building, New York
First National Bank Building, Baltimore

Pacific Coast Distributors: Columbia Steel Company, Russ Bldg., San Francisco

Export Distributors: United States Steel Products Company, New York



WHOLESALE PRICE INDEXES



1926 MONTHLY AVERAGE = 100

MATERIAL PRICES, BUILDING WAGE RATES AND BUILDING COSTS COMPARED

WAGE SCALES IN THE BUILDING TRADES

Information Furnished by National Association of Builders Exchanges and Compiled by Division of Statistics and Research, F. W. Dodge Corporation, as of July, 15, 1934

	Asbestos Workers	Bricklayers	Bricklayers Tenders	Carpenters	Cement Finishers	Electricians	Hoisting Engineers	Iron Workers—Ornamental	Iron Workers—Structural	Laborers	Lathers	Painters	Plasterers	Plasterers' Tenders	Plumbers	Roofers—Composition	Roofers—Slate & Tile	Sheet Metal Workers	Steamfitters	Stone Masons	Tile Setters	Tile Setters' Helpers
Akron	$1.00	$1.25	$0.45	$0.70	$0.70	$0.75	$0.70	$0.60	$0.60	$0.40	*$0.87½	$0.65	*$1.00	$0.62½	$0.85	$0.80	$0.80	$0.80	$0.85	*$1.25	*$1.25	*$0.50
Atlanta	1.00	1.25 1.40	‡.30 .45	.70	1.25	.90 1.10	.60 1.00	.35 1.85	1.25	.25 .35	1.00 1.25	.75	1.25	.30 .45	1.25	.80	80	.90 1.00	1.25	1.00 1.25	1.25	.40
Baltimore	1.00	*1.00	1.00	1.10	*1.00	*1.00	*1.25	*1.37½	*1.37½	.20 .30	*1.25	.80 *.90	*1.25	1.00	*1.00	.75	.75	*1.12½	*1.00	1.00	1.25	.72
Boston	1.25	*1.30	.70	*1.17½	1.17½	*1.25	1.17½	*1.20	*1.20	.70	*1.50	*1.12½	1.37½	*.95	*1.25	*1.17½	*1.05	1.17½	*1.25	*1.30	*1.30	*.95
Buffalo	1.00	*1.25		*1.00	.90	1.12½	1.00	1.12½	1.12½	.40 .50	1.25	*1.00	1.00		1.00	.50	1.00	1.00	*1.00	*1.25	*1.18¾	
Chicago	1.37½	1.50	.82½	*1.31¼	1.31¼	1.50	1.31¼	1.31¼	1.35	.82½	*1.50	1.33½	*1.50	88¾	1.37½	1.37½	1.50	1.37½	1.37½	1.50	1.37½	1.00
Cincinnati*	1.15	1.37½	.70	1.20	1.02½	1.25	.80 1.25	1.25	1.25	.45	1.31¼	1.15	1.37½	.70	1.25	.92½	1.07½	1.07½	1.12½		1.00	
Cleveland*	1.17½	1.25		1.12½	1.12½	1.37½	1.12½	1.25	1.25	.72½	1.25	1.20	1.25		1.25	1.15	1.37½	1.12½	1.25		1.25	.81¼
Columbus	1.00	1.30	.62½	.80	.80	1.00	1.15	1.25	1.25	.40	1.00	.80	1.00	.62½	1.00	.80	1.00	.80	1.00	.75	1.25	.50
Dayton*	1.25	1.30	.80	1.00	1.15	1.55	1.25	1.35	.50	.50	1.10	1.00	1.20	.80	1.00	.85	1.00	1.00	1.00	1.30		
Denver††	9.00	12.00 *13.00	6.50 7.00	10.00	10.00 11.00	10.00 11.20	10.00	10.00 11.00	10.00 11.00	4.00 5.00	11.00	*10.00	12.00	7.00	11.00	7.00 8.00	7.00 8.00	9.00	9.50	12.00 13.00	10.50	†.62½
Des Moines	1.00	1.25	.67½	1.00	1.00	1.00	1.00	1.00	1.20	.55	1.00	1.25	1.25	.67½	1.00	1.00	87½	87½	1.00	1.25	1.25	.67½
Detroit	1.37½	1.25 max	.55 .60	80 1.00	.70 .90	1.25 1.40	.60 1.00	1.00 1.20	1.00 1.25	.50 .55	1.37½	80 1.00	1.00 1.25	.70 .80	1.00 1.50	.70 .90	.80 1.00	.80 1.00	1.25 1.50	1.25 1.50	1.00 1.25	.80
Duluth	1.00	1.00	.50	.80	.80	1.00	.80		1.00	.50	.80	.80	1.00	.70	1.00	70	1.00	85	1.00	1.00	1.00	1.00
Erie		1.00	.45 .50	.80	.80	90 *1.00	90	.60 .80	90	.40	90	60 70	1.00	.40 .50	1.00	50 .60	.80 90	.80 90	*1.00	1.00	.80	.40 .50
Houston		1.00	.35	.75	75	1.00	.75	1.00	1.00	35		.62½	1.00	35	1.00	.75	1.00		1.00	1.00	1.00	
Indianapolis	1.32½	1.62½	.90	1.22½	1.17½	1.50	1.37½	1.45	1.45	.40 .45	1.37½	1.25	1.57½	1.00	1.00	.60 .90	1.27½	1.22½	1.50	1.62½	1.50	.60
Kansas City	.90	1.32½	.80	1.00	1.00	1.00	1.00	1.00	1.00	.60	1.00	1.00	1.06¼	.80	1.00	.92½	.92½	1.00	1.00	1.12½	1.25	.62½
Los Angeles††	10.00	8.00	6.00	7.00	8.00	7.00	8.00	9.00	10.00	4.00	10.00	7.00	9.00	6.00	9.00	7.00	7.00	8.00	10.00	8.00	6.00	†.75
Louisville	1.00	1.25	.62½	1.00	1.00	1.00	1.00	1.00	1.00	.40	1.12½	.95	1.00	62½	1.12½	.40	.85	.85	1.12½	1.25	1.00	
Memphis	1.00	1.37½	.50	.50	.50	1.00	.75	.75	.75	.20	1.00	.75	1.25	.50	1.25	.25 .40	1.12½	1.12½	*1.25	1.37½	1.25	.50
Milwaukee	1.00	1.00	.75	.92½	1.00	1.25	1.00	1.05	1.05	.60	1.00	1.00	1.00	75	1.00	1.00	1.00	.92½	1.00	1.00	1.00	.65
Minneapolis	1.00	1.00		.80	80	1.00	.80	.90	1.00	.45	.75 .85	.80	1.00	.70	1.00	.70	70	.80	1.00	1.10	1.00	.65
Nashville		1.00		.60 .75	.50	.75		60	.75	40	1.00	.62½	1.00		1.00	60	.60	.60	.75	.50	.75	
New Haven*		1.20	.50 .60	.80 1.06¼	1.20	.80 1.00	1.16¾ 1.27½	1.37½	1.37½	45 .65	1.27½	.80 1.00	1.20	.50 .60	1.06¼		1.50	1.06¼	1.06¼	1.20	1.20	
New Orleans	.65 .80	1.25	.85	.55 .75	1.00	1.25	1.25	1.25	1.25	.35 .50	1.25	.75 .90	1.25	.75	1.00 1.25	.40	.90 1.15	.90	1.05 1.25	1.50	1.25	.35
New York City††	11.20	12.00	7.00	11.20	c11.20	11.20	13.20	11.20	13.20	6.60	11.20	9.00	12.00	8.50	c12.00	10.28	12.62	11.20	11.20	12.00	11.50	8.50
Oakland††	6.40	10.00	5.60	7.20	7.20	8.00	8.00	7.20	9.60	5.00	8.00	7.00	8.80	6.00	8.00	6.40	6.40	8.00	9.00	8.00	8.00	5.00
Oklahoma City††	8.00	8.00	4.00	6.00 8.00	8.00	6.00 8.00	8.00	8.00	8.00	3.50	.80	7.00 8.00	.80	4.00	.80	8.00	6.00	8.00		11.00		†.62½
Omaha	1.32½	1.12½	.45	.90	1.00	1.00	1.00	.90	.90	.50	.90	.80	1.20	.80	1.20	.72½	.95	1.00	1.20	.90	1.00	.50 .60
Philadelphia	1.00	1.50		1.00	1.05	1.25	1.18½	1.25 1.37½	1.00 1.37½	.40	1.37½	.90	*1.37½		1.20	1.00	1.25	1.25	1.15	1.25	1.12	75
Pittsburgh	*1.50	*1.50		*1.25		*1.56¼	1.37½ 1.43¾	*1.37½	1.37½	.70	*1.50	.87½	*1.50		1.50	*1.25	*1.50	*1.31¼	*1.50	*1.40	1.33¾	.88
Portland, Ore ††	8.00	*9.60	7.20	7.20	*7.20	*8.00	6.40 9.60	8.80	8.80	4.80	*8.80	7.04	*9.60	*7.20	*8.80	7.20	7.20	*8.00	*8.80	*9.60	8.00	7.20
Reading	.80	.80	.60	.80	.80	.80	.80	.80	.90	.40	.90	.63	.90	.60	.90	.80	.80	.70	.90	.70	.75-1.15	.50
Richmond	.60 .65	1.25		.60	.35 .40	.80		.70	.70	.40	1.00	60	.60		.90	.60	60	1.00	.90	1.25	1.25	
Rochester	.91	1.25	.55	1.05	*1.25	*1.15½	.90	.70-*1.00	.70-1.00	.55	.90	1.05	*1.25	.55	*1.06¾	*.80	*.80	1.05	*1.06¾	*1.25	1.12½	.47½
Salt Lake City ††		9.00	5.00	7.20	8.00	1.12½	1.12½	1.12½	1.12½	4.00	1.10 1.25	7.20	1.50	1.10	8.00	7.20	8.00	8.00	8.00	9.00	8.00	4.00
San Antonio††	6.00 10.00	6.00 10.00	2.00 3.00	2.00 7.00	3.00 8.00	3.00 7.00	4.00 7.00	1.75 4.50	5.00 10.00	1.50 2.50	4.00 7.00	3.00 7.00	4.00 8.00	2.00 3.00	5.00 8.00	5.00 6.00	4.00 6.00	3.00 7.00	5.00 8.00	3.50 8.00	4.00 10.00	2.00 3.00
San Francisco	6.40	9.00	7.00	7.20	7.20	9.00	9.00		9.60	5.00	8.00	7.00	8.80	7.50	8.00	8.00	8.00	7.20	8.00		8.00	5.00
Seattle††	8.00	9.60	5.28	7.20	7.20	*8.80	8.00	8.00	8.80	4.75	*8.80	7.20	*9.60	*6.40	*8.80	7.20	7.20	8.00	*8.80	9.60	8.00	
Sioux City	1.00	1.25	.50	1.00	.75	1.00	1.00	1.00	1.80	.50	.90	1.00	1.25	.60	1.00	.90	.90	.85	1.00	1.25	1.00	.60
St. Louis	1.25	1.50	1.00	1.25	1.31¼	1.50	1.35-1.47	1.47	1.47	.78¾	1.25	1.25	1.50	1.06¼	1.43¾	1.17½	1.25	1.25	1.43¾	1.25	1.25	.76½
St. Paul	1.00	1.00		.80	80	1.00	.80	1.00	1.00	.50	.90	.80	1.00	.70	1.00	.80	.80	.85	1.00	1.00	1.00	
Washington, D.C.	*1.50	1.75	.50 .75	*1.37½	1.25	*1.65	*1.37½	*1.65	*1.65	.75	*1.62½	*1.37	*1.75	*.75	*1.50	*1.37½	*1.37½	*1.50	*1.50	*1.25	*1.50	.75
Wichita	.60	.75 1.25	.25 .40	.40 .75	.40 1.00	.50 .87½	.30 .75	.40 1.00	.40 1.00	.20 .40	.50 1.25	.50 .87½	.60 1.25	.25 .50	1.00	.50 1.00	.50 1.00	.50 1.00	.75 1.12½	75 1.25	.50 1.00	.25 .40
Youngstown††	*1.00	1.25	.60	.75-1.00	1.12½	1.00	1.12½	1.25	1.25	.40	1.00	1.00	1.25	.75	1.00	1.00	1.00	1.00	1.00	1.25	1.25	.81¼

NOTE.—Where two figures are shown they are the minimum and maximum. All figures are for hour rates except as indicated. ††8-hour day. ‡6-hour day. †Rate per hour. *On 5-day week basis. cCorrection. Asterisk after city indicates all trades on five-day week basis.

ABOVE DATA ARE WAGE SCALES AND DO NOT NECESSARILY INDICATE ACTUAL WAGE RATES BEING PAID IN THE RESPECTIVE TRADES.

Where the going is **tough**— *you'll find* **Sealex** *going strong*

It was before store hours — and the going was quiet for this Sealex Linoleum Floor—when they took this photograph of the Kroger market in Cincinnati, Ohio.

But when this market is open for business — it's a different story. Shoppers in and out, all day long — constant foot-traffic. Rain, snow, dirt — whatever's on the sidewalk gets tracked in. Can Sealex "take it"? The Kroger Company says "Yes"! — *and they said it with orders for other stores after they had tried their first Sealex Floor!*

Sealex Floors, though quiet and comfortable underfoot, are built to retain their good looks throughout years of service. They are water-proof and stain-proof — easy, and inexpensive to maintain.

Sealex gives the designer the widest latitude in creating individual custom floors particularly desirable for the chain store or smart shop. And with Sealex Floors you may combine harmonizing patterns of Sealex Wall-Covering to achieve the special smartness of a unified decorative scheme.

Sealex materials are highly suitable for remodeling work — go on right over the old floors and walls. When installed by authorized contractors of Bonded Floors or Bonded Walls, both materials and workmanship are backed by a Guaranty Bond.

CONGOLEUM-NAIRN INC., KEARNY, N. J.

SEALEX

REG. U. S. PAT. OFF.

floors and walls

NEW MATERIALS & EQUIPMENT

NEW CATALOGS

RESEARCH REPORTS

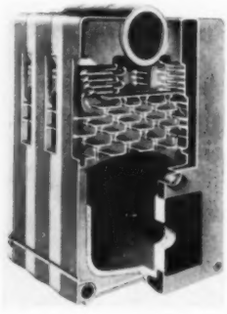
MANUFACTURERS' LITERATURE

Architects are invited to use the coupon on this page as a convenient means of obtaining manufacturers' publications describing in detail the products and materials mentioned

J1
SPENCER HEATER COMPANY ANNOUNCES NEW TYPE BOILER

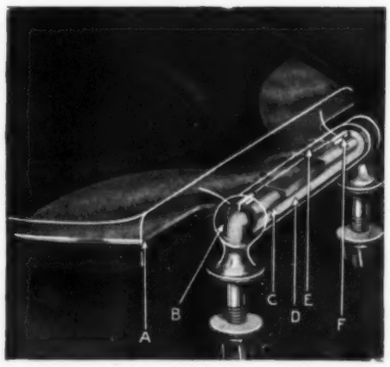
A new type Spencer Magazine Feed Boiler to be known as the C-N Spencer is announced by Spencer Heater Company, Williamsport, Penna. New model burns chestnut size anthracite or coke, the type of fuel burned in ordinary boilers, and continues the original Spencer principles of magazine feed boiler construction assuring an even, steady heat and uniform temperature, and requiring attention to the boiler only once a day in severe weather, or less frequently on average winter days.

J2
CAPITOL OIL BURNING BOILER



A burner embodying several important improvements is offered by United States Radiator Corporation. Known as the "O" series, this burner has an extended rib type heating surface, large combustion chamber, new methods of fire travel, of heat absorption, of internal water circulation and new type wet base construction. The unit is of cast iron construction, provides year-'round hot water and is arranged for wholly automatic operation. Exterior beauty is another noteworthy feature.

J3
CHURCH SANI-BLACK SEATS



A. Heavy steel hinge plate anchored into solid wood core extending back and housing the axis for the hinge rotation — molded integral with seat.
B. Hard rubber covering on hinge posts over brass core —cannot rust or corrode.
C. Heavy brass hinge post lug —note long bearing surface.
D. Brass bearing for hinge rotation integral with steel plate.
E. Perforations in steel plate through which rubber is forced under hydraulic pressure, thereby uniting rubber and plate into a solid unit.
F. Concealed brass check, so designed that it allows the seat to stand in vertical position when raised without striking wall, tank or flush valve.

As evidence of the indestructibility of Church sani-black toilet seats the manufacturer offers to furnish a cross section sample. The core is hardwood, thoroughly kiln-dried. The steel plate is anchored in the core, extending back and housing the axis for the hinge rotation. The whole exterior is a thick coat of composition hard rubber. The ensemble—core, plate, and exterior—is molded under 216,000 pounds of hydraulic heat pressure. The result is said to be a homogeneous unit, lustrous and attractive; no screws or parts to work loose; impervious to moisture, acid, heat, cold or corrosion; easily withstands the roughest treatment; sanitary.

J4
NEW TYPE WINDOW

Thermopane, a type of double glazed window which substantially reduces heat loss through windows and prevents frosting in cold weather, is being acquired by the Libbey-Owens-Ford Glass Company through a newly organized subsidiary, The Thermopane Company. The product consists of two panes of glass so fitted to each window sash that it provides a dehydrated air space between and reduces the flow of heat and cold. Tests conducted by engineers showed that the new principle saves about 50 per cent of the usual heat loss through windows. The device, which has been applied successfully in solving problems of air conditioning, is expected to have a widespread effect in the construction of windows in new homes and buildings.

TO OBTAIN FURTHER INFORMATION

about any products mentioned, write the index numbers in space below. For literature about products *advertised* in this issue, give name of the product and manufacturer. Return coupon to The Architectural Record, 119 West 40th Street, New York, N. Y.

. . . . . .

. . . . . .

. . . . . .

Name_____

Position_____

Street_____

City and State_____

A New BRYANT Catalog! geared to the times....

COMPACT . . . COMPLETE . . . CONVENIENT

The catalog requirements of the architect, the contractor, and the wholesaler, were constantly kept in mind in the preparation of the Bryant 1934 Catalog. We are confident that all the trade will find it of handy size, complete as to data, and easy for reference.

If you have not received your copy write our nearest office.

BRYANT SUPERIOR WIRING DEVICES

BRYANT *Superior Wiring Devices*

Manufactured by THE BRYANT ELECTRIC CO., Bridgeport, Conn.

MANUFACTURERS OF "SUPERIOR WIRING DEVICES" SINCE 1888 . . . MANUFACTURERS OF HEMCO PRODUCTS

NEW YORK 60 East 42nd Street . . CHICAGO 844 West Adams Street . . SAN FRANCISCO 149 New Montgomery Street

1906

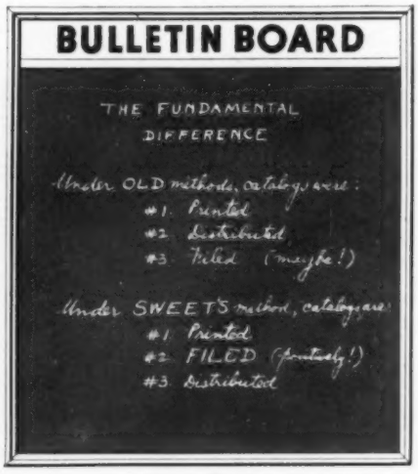
MODERN CATALOGING

Published Monthly by SWEET'S CATALOG SERVICE
Division of F. W. Dodge Corporation

1934

Volume 1 SEPTEMBER, 1934 Number 4

BULLETIN BOARD



"The new Sweet's needs more than a card of acknowledgment. It would be difficult for me to tell you what a fine piece of work you have done with this latest edition. It is wonderful. . . . Our office constantly advises all manufacturers to use Sweet's as it will save us time and them money."

ROBERT R. GRAHAM, *Archt.*, Middletown, N. Y.

The boat was sinking. The skipper rushed up to a crowd of scared passengers. "Who among you can pray?" he asked them.

"I can," answered the outspoken missionary.

"Then pray, mister," ordered the skipper. "The rest of you put on life preservers. We're one short."

"Making loans for major structural changes without competent architectural and engineering supervision also is regarded as dangerous practice."

—*Business Week* (Article on "Better Homes—Better Business")

New orders for electrical goods (motors, batteries, domestic appliances, etc.) totaled 41% more in the first half of 1934 than in the same period in 1932, and 60% more than the first half of 1933.

Highheels and Highballs!

Four women were among the prize winners in a nation-wide contest conducted by Brunswick - Balke - Collender Co., for new ideas in bar design.

What *is* in a Name

WHENEVER an architect calls us Sweet's Index, our first thought is, "Friends for twenty-eight years!" His use of that name, which was a forgivable corruption of Sweet's Indexed Catalogue of Building Construction, marks him as one who has spent the greater part of his adult life in the practice of his profession.

We won't start a quarrel over the relatively trivial matter of a name at this late date and if Sweet's Index suits his fancy more than Sweet's Catalog File, why then, Sweet's Index it is—and may he live to receive the 1964 edition!

But we ask all who can do so without having to change a habit of years, to refer to Sweet's by its correct name. There is a reason. Architects say that Sweet's will become even more useful as manufacturers file more complete catalogs in it. But a manufacturer naturally will hesitate to consign his catalog to an "index." To him, that is but one step removed from a directory—a mere listing of names and addresses.

So if we can help him in any way to understand that Sweet's is a file of catalogs, let's do so. And not the least effective way is to call it by its right name—Sweet's Catalog File.

Their Spontaneity Makes Them Click

AN ARCHITECT wrote us a while ago to acknowledge receipt of Sweet's and to express his thanks which, he said, were long overdue. He had come to accept the arrival of a new Sweet's Catalog File each year as a matter of course, along with the seasons and other natural phenomena, and only when he stopped to compare the amount of information in this useful form with that in a usually disorderly pile of loose catalogs, did he realize Sweet's indispensability.

We are not adverse to receiving these notes of appreci-

ation. In addition to their contribution to our sense of satisfaction and accomplishment, without which all effort seems vain, they serve a very practical purpose. By allowing manufacturers to read them over our shoulder, so to speak, we convey to them in convincing phrases the picture of what happens to catalogs on the receiving end when distributed individually, and how the difficulty for both manufacturers and architects can be overcome through collective distribution in the Sweet's file.

More Complete Catalogs

THE ULTIMATE AIM of Sweet's is to furnish architects each year with a file of catalogs in which they can find complete, up-to-date information on the products of every reputable manufacturer.

A measure of the progress toward this goal is found in the yearly increase in the number of complete catalogs. It should be remarked at this point that the number of pages does not, in every case, indicate the completeness of information, or lack of it. In addition to the many catalogs in Sweet's whose bulk alone marks them for attention, there are scores of complete catalogs which do not exceed a half-dozen pages or so. These are just as valuable and useful in connection with the products they describe as the catalogs in which the complete presentation necessitates the use of eighty or a hundred pages.

The important point is that Sweet's clients as a whole have come to appreciate the value of this kind of contact with the profession and that the present trend is away from the "advertising" form and toward the complete "catalog" form of presentation.

It is also significant that nearly all the ground gained has been retained. In other words, when a manufacturer has learned to take full advantage of Sweet's service, he continues to use it year after year. The few who drop out do so, almost invariably, for reasons which do not concern the quality of the service rendered.

Note: This and the other related subjects are discussed more fully in Sweet's Catalog File, 1934, Section A, page 104.

Sweet's Consulting Staff

THE members of Sweet's Consulting Staff personally prepared or directed the preparation of many of the most complete and informative catalogs filed in Sweet's.

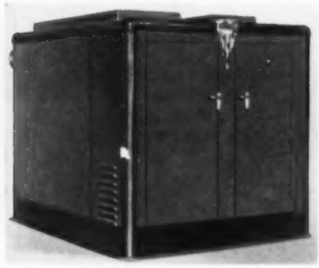
JOHN BRACKETT, M.E.; consulting engineer; specialist in industrial plant construction; M.E., Armour Institute 1915; associated at various times with Sargent & Lundy, Chicago, Roberts & Schaefer, Chicago; built plants of Tennessee Copper & Chemical Co., and International Nickel Co.; plant extensions and improvements, American Chain Co.; Wasburn Wire Co., Standard Sanitary Mfg. Co., Bethlehem Steel Co., J. G. Stein Co. (Bonnybridge, Scotland), Eastern Rolling Mills; consulting engineer for Sweet's Catalog Service since 1926.

As We Were . . .

AUTOMATIC SELF-LOCKING SCUTTLE OPENER

SAFETY DEVICES, 1906: "Show the product in action" *was a fundamental recognized in* 1906 *as well as today. This illustration, reproduced from the first Sweet's, points out one function of a double-duty device which, to quote the copy, "gives absolute security from scuttle thieves and affords a quick method of escape in case of fire." The composed manner in which mademoiselle is making her escape from the roaring flames reflects, we presume, her confidence in the apparatus.*

J5
DELCO CONDITIONAIR



Delco Appliance Corporation, Rochester, N. Y., subsidiary of General Motors, announces Model DA, Delco-Heat Conditionair, unit construction. Stream-line heat transfer unit of "tear-drop" design. Three pass heat transfer surfaces. Large heating area dotted with heat projectors which transfer maximum heat to flowing air. Combustion chamber refractory liberates stored heat after burner has ceased operating. Purifies the air; humidifies; automatically heats; circulates air and changes it completely every ten or fifteen minutes. Attractive furniture-steel cabinet in Jade and Killarney green with chromium trim. No exposed mechanism. Design enhances appearance of basement floor. Delco-Heat Fuel Control. Burner mechanism outside heating zone; soft, radiant flame. Burner, controls and blower motor readily accessible. Filters contain specially treated strands of blown glass. Quiet, large-capacity blowers. Aquator of cascade design moistens air. Automatic controls consist of Thermostat or Chronotherm, Protectorelay, Airstat, Furnacestat and summer switch. Distribution of Delco-Heat Conditionair to dealers began in July.

J6
VIBRATION FOR PLACING CONCRETE

Vibration as a method of placing concrete is discussed in a booklet published by Portland Cement Association. By reducing the required water content of a concrete mixture, the vibration process, employing electric magnet pulsator or other vibrating mechanism, makes it possible to work with stiff concrete resulting in a more watertight, dense and durable job.

J7
YORK REFRIGERATION

A folder on Air Conditioning issued by York Ice Machinery Corporation describes recent outstanding installations of York refrigerating and air conditioning equipment in banks, office buildings, hotels, restaurants and department stores. Included among these installations are several Government buildings in Washington, for example, the Archives Building, the new wing of the Senate Office Building, and (for refrigeration only) the United States Post Office Department, the Library of Congress and the Department of Justice. Another section of the folder is devoted to theater air conditioning installations, and to the air conditioning of railway cars.

J8
NEW AIR CONDITIONING UNIT BY CHRYSLER MOTORS

The Amplex Manufacturing Company, division of Chrysler Motors, is now producing an air conditioning unit known as "Airtemp." Conditioning functions: heating, humidifying, cooling, dehumidifying, cleansing, circulating. The unit has a common heating and cooling coil, using steam or hot water for heating and any type of refrigerant or direct expansion for cooling. It can be connected to the ordinary house plumbing. Two twin centrifugal fans, connected to a ⅛ horse-power electric motor, force the air up through the water coils and into a chamber where the air passes through two cleansing sprays of water. Operation of the unit is said to cost but a few cents per day.

J9
NEW AIR VALVE

Extending its line of air and vacuum valves for radiators, the American Radiator Company has placed on the market a popular priced air valve for use on low-pressure steam radiators. Known as the Favorite Valve, it is of all metal construction with a thermostatic float and siphon, and has a nickel case. It is furnished in four models, one with an angle connection, and three straight shank models.

USE DURIRON

Laboratories, medical buildings, restaurants, photographic studios, engraving plants, battery stations, etc.

DURIRON
ACID PROOF
DRAIN PIPE

THE DURIRON COMPANY, Inc.
404 N. Findlay Street
DAYTON, OHIO

See Our Catalog in Sweet's

TAKE A TIP FROM THE THEATRES

. . . when you modernize for building-wide hearing

In the better talking picture theatres, people have learned to know the finest reproduction—Western Electric Wide Range Sound. They expect equally good sound from Program Distribution Systems in hotels, schools, hospitals, auditoriums.

In your modernization projects, it is wise to specify Western Electric for building-wide hearing. Highest tonal quality is assured. This equipment—like the most modern sound apparatus in talking picture studios, theatres and broadcasting stations—is built on Wide Range Sound principles.

Wide Range reproduces speech and music with perfect fidelity over the full audio frequency range because of five exclusive features: (1) Reproduction of *higher* sound frequencies; (2) Reproduction of *lower* sound frequencies; (3) Increased volume range; (4) Elimination of distortion; (5) Elimination of extraneous sound.

In modernizing *apartment houses* and office buildings, another Western Electric product deserves consideration. This is the Radio Frequency Distribution System, which—using a *single antenna*—provides antenna and lead-in facilities for as many as 3000 tenant-owned radios. A System to accommodate up to 10 receivers of any make also is available.

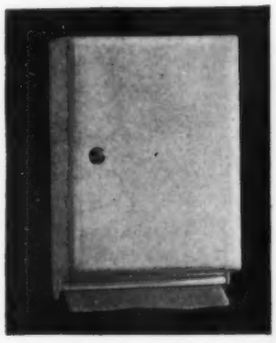
Graybar's engineers will gladly cooperate with you in planning installations to meet specific needs. For full information, write to Graybar Electric, Graybar Building, New York—or telephone Graybar's nearest branch.

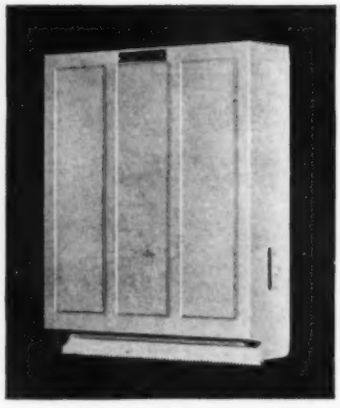
Western Electric

PROGRAM DISTRIBUTION AND PUBLIC ADDRESS SYSTEMS

Distributed by **GRAYBAR** *Electric Company. In Canada: Northern Electric Co., Ltd.*

A sound business proposition!





Onliwon White Enamel Towel and Toilet Cabinets.

IT'S good business to specify A.P.W. Onliwon Towels and Onliwon Tissue as washroom appointments. It will please your clients because they know the neat, trim Onliwon Cabinets are symbols of both quality and economy. And they know that tenants are easier to sign—and keep signed—in A.P.W. equipped buildings. Onliwon Cabinets are available in a variety of designs, materials and finishes to harmonize with any washroom layout. They are sturdy and simple to use and prevent waste and unnecessary litter by method of dispensing one towel or two sheets of tissue at a time. The remainder is kept neat and safe from promiscuous handling up to the moment of use. Send today for our catalogue giving full details of all A.P.W. Cabinets—surface and recess, metal and solid porcelain. A. P. W. Paper Co., Albany, N. Y.

A.P.W.

AR934

A. P. W. PAPER CO., ALBANY, N. Y.

Please send me the latest complete catalogue of A.P.W. Cabinets and Fixtures.

Name.....

Address.....

City.....State.....

J10

PROTECTION AGAINST ROT AND TERMITES

Termites are prevalent in almost every part of the United States. They are said to destroy over $300,000,000 of lumber in use in this country every year. As protection against this menace Reilly Tar & Chemical Corporation manufactures a transparent, penetrating creosote that is dry, not oily, colorless and odorless, and lumber on which it is applied can be painted. Reilly Penetrating Creosote is applied by immersion or by pressure depending upon the hardness of the wood. It is equally effective against rot as against termites.

J11

WESTINGHOUSE ANNOUNCES NEW CHEST MODEL REFRIGERATOR

A new chest type refrigerator of two cubic foot capacity, to sell at $77.50 f. o. b. factory, is announced by the Westinghouse Electric and Manufacturing Company. This refrigerator, Model DC-20, has the same hermetically sealed unit as used in all Westinghouse refrigerators. The chest model is recommended as an auxiliary refrigerator for use in recreation rooms, pantries, small stores, business offices, etc. It is also suitable for small homes, apartments and summer cottages.

J12

CAST STONE

A group of service bulletins intended to furnish impartial information on the nature, uses and proper treatment of cast stone has been issued by The Cast Stone Institute, Chicago. Subjects treated include cast stone in color, cast stone copings and coping joints, specification data, etc. Periodically additional bulletins will be issued by the Institute.

J13

NEW LINOLEUM PATTERN BOOK

Congoleum-Nairn Inc. announces its Pattern Book for 1934-35. Comprising over 200 pages of illustrations in color this book shows many designs included in the Pattern Book for the first time. The three gauges—heavy, medium and standard—representing linoleums for a wide variety of rooms and purposes are all included in a complete line of patterns.

J14

I-BEAM-LOK HEAVY DUTY FLOORS

Research to develop a lighter, more rugged, less costly combination steel and concrete bridge roadway slab or heavy duty floor has led to the production of the I-Beam-Lok Armored construction by Carnegie Steel Company. The construction takes advantage of the principle of the strength of the I-Beam. In addition to use on large bridges, the light weight of I-Beam-Lok Armored Slabs, and the savings possible through their use, permits their application on many small beam and girder bridges, as well as on heavy duty factory floors, garages,

Have You Checked Inland 4-Way Floor Plate Against Your Needs?

● Inland 4-Way Floor Plate offers: 4-Way Safety—projections center one another at right angles, equal traction in 4 directions.

Extra stiffness—projections overlap, reinforce one another lengthwise as well as crosswise. Therefore, 4-Way is the stiffest plate made.

4-Way Drainage—dries quickly, safer on outdoor installations. Easy to sweep 4 ways.

4-Way Matching—plates match whether laid side to end, side to side, or end to end, permitting neat, continuous pattern all over a floor with the least possible waste.

Check these advantages against your requirements for stairways, floors, walkways, platforms, any installation where foot or wheel may slip. We believe you will agree that Inland 4-Way Floor Plate meets your needs in every respect. INLAND STEEL COMPANY, 38 So. Dearborn St., Chicago, Illinois.

Illustrated Folder Mailed on Request

4-Way Safety

4-Way Matching

4-Way Drainage

Extra Stiffness

NRA CODE

INLAND STEEL

ABLE SERVANT OF THE CENTRAL WEST

Sheets Strip Tin Plate Plates Structurals Piling

Rails Track Accessories Bars Rivets Billets

ROOFING FAILURES NO. 8

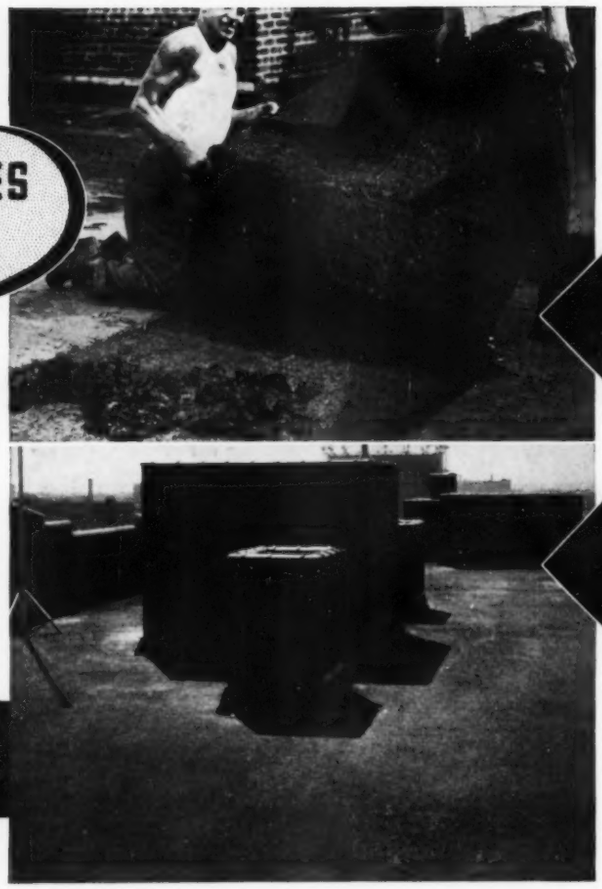
THESE two roofs served under identical conditions. The pitch-and-felt roof was nine years old when the smooth-top roof was built. The pitch-and-felt roof is still fine, 16 years old and with years ahead of it. But the smooth-top roof cracked, leaked, ruined the insulation . . . and was taken off.

Why the difference? Simply this: Smooth-top roofings should never be placed on flat decks. This one *was* built on a flat deck. Water lay on it and the roofing disintegrated.

Roofers all over the country are now protesting against the use of anything but coal tar pitch on flat decks.

KOPPERS PRODUCTS COMPANY
KOPPERS BUILDING, PITTSBURGH
Birmingham Boston Chicago New York
Providence St. Louis

- **Koppers Coal Tar Pitch**
- **Koppers Tar Saturated Rag Felt**



7 YEARS OLD . . . Ruined. A Smooth-Top Roof

These two roofs were on buildings almost side by side in Brooklyn.

16 YEARS OLD . . . Still Fine. Pitch and Felt Roof

Other Koppers Products: Membrane Waterproofing; Dampproofing; Tar Aluminum Paints; Plaster Bond Paints; Tarmac Road Tar for Streets, Pavements, Drives, Highways.

NRA WE DO OUR PART

ramps, wharves, docks and similar structures. A catalogue, containing a description of engineering features and design data is offered by the manufacturer.

J15
NEW CHASE LAMPS

A new line of lamps is announced by Chase Brass & Copper Company. "The basic theory," according to the announcement, "is similar to that of their lighting fixtures: making available to the public, at moderate price, a complete line of lamps in each of the main decorative periods." Clement C. Horton, in charge of Chase's lighting sales states that "no matter what a room has in the way of fixtures, it should have a suitable number of portables to create proper and comfortable lighting." The basic material used in the new Chase lamps is fine brass; the shades are parchment, silk, taffeta and cellophane. Genuine Wedgwood, fine crystals, porcelain and glass are employed to secure certain effects. The floor lamps have semi-direct reflectors and indirect-three-lite reflectors, equipped with three circuit switches. Mr. Horton states that "they represent a line of lamps with a story—with a meaning."

The accuracy with which the belts fit the grooved sheave has a decided effect upon the drive. Texrope belts, made for Allis-Chalmers by B. F. Goodrich, are formed in precisely machined molds. They seat perfectly in the grooves of Texrope Sheaves

Save Money! Space! Machinery!

TEXROPE $\frac{\text{Multiple}}{\text{V-Belt}}$ DRIVES have been steadily growing in popularity for the last several years. To meet the thrifty consumer demand the drive must be economical in first cost as well as in maintenance. Texrope Drives actually save money right from the start . . . they save space, too, and compact installations are always preferred . . . Texrope Drives really protect machinery because of their ability to absorb shock loads; they "soft pedal" vibrations which might ruin bearings and cause expensive shutdowns. To use Texrope Drives means to Save.

Illustrated booklet 2147 on "Texrope Drives for Heating and Ventilating Systems" will be sent on request to nearest district office or Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin.

ORIGINATED BY ALLIS-CHALMERS

TEXROPE DRIVES

THE DRIVES THAT REVOLUTIONIZED TRANSMISSION PRACTICE . . .

HOUSE IN BEAUMONT, TEX. *Architects, B. E. Irby and H. R. Woodside, Beaumont. Walls painted with Cabot's* DOUBLE-WHITE, *blinds with Cabot's Green Gloss Collopakes.*

Painting—Outside Walls

(Notes for the Specification Writer)

For a brilliant outside white that does not yellow with age—use Cabot's DOUBLE-WHITE. Goes on wood, brick, stone, cement, all equally well. A colloidal paint product, made by patented Cabot Collopaking Process, with resulting increase in hiding power. Saves paint labor cost (3 or 4 times cost of paint itself) in painting and repainting.

Painting—Trim, Shutters, etc.

Greens—If greens of a high degree of permanence are wanted, use Cabot's Green Gloss Collopakes. These colloidal colors are made without fillers, using the strongest and purest metallic pigments. Fading is minimized—Green Gloss Collopakes stand up and retain their fresh and lively colors and Gloss. Hiding power is high. Available in a wide range of greens. (Gloss Collopakes made also in browns and other colors).

* * * * * *

Color Cards and information are immediately available to architects by using coupon at foot of this advertisement.

Cabot's

DOUBLE-WHITE

and Green Gloss Collopakes

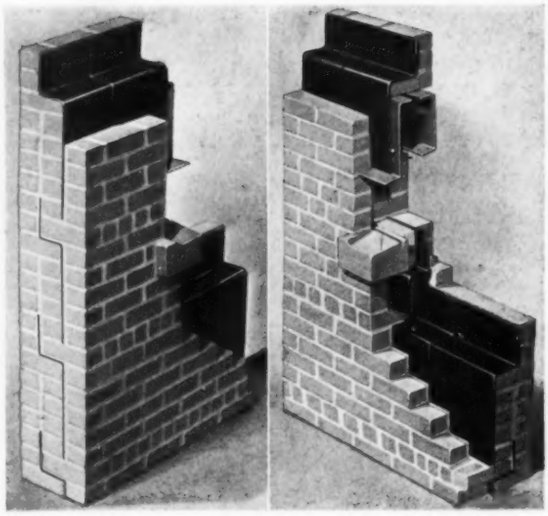
Samuel Cabot Inc.
Manufacturing Chemists

141 Milk Street
BOSTON, MASSACHUSETTS

Please send me color card and full description of Cabot's DOUBLE-WHITE and other Collopakes.

Name .....

Address AR-9-34



J16
NEW METHOD OF BRICK WALL WATERPROOFING

A new idea in waterproofing and dampproofing brick walls is used in the Larson Preformed Waterproofing Units manufactured by Arved L. Larson, New York City. These preformed units are sealed within the wall, during its erection, in such a manner as to strengthen the wall structure. As illustrated, at each header course in the face, a corresponding header course laps it under the membrane of the unit from the inside wall, forming a complete membrane barrier against water and dampness. This results in a sturdy bond in the wall and is accomplished without undue difficulty by the masons as the wall is laid up to receive the units. To provide tight joints between window and door frames and the surrounding masonry, specially formed Larson units have been designed to seal the frame against water and dampness. Other special units afford the same protection for spandrels. The new product is marketed by the Brisk Waterproofing Company of New York.

TRADE ANNOUNCEMENTS

INLAND STEEL CO.

Mr. Malcolm E. Gregg, since 1928 Assistant District Sales Manager of the Inland Steel Company's Milwaukee, Wisconsin office, has been appointed District Sales Manager at this office, succeeding Mr. Harry L. McCauley, who died on June 25th.

REPUBLIC STEEL CORPORATION

Stanley A. Knisely, of Cleveland, has been appointed advertising and sales promotion manager of Republic Steel Corporation with headquarters at Youngstown, Ohio. He succeeds L. S. Hamaker who was recently made vice president and general manager of the Berger Mfg. Co., Republic subsidiary, of Canton, Ohio.

PITTSBURGH PLATE GLASS CO.

Operations at the Window Glass Factory of the Pittsburgh Plate Glass Company, Mt. Vernon, Ohio, are being resumed during the present month. The factory has been closed since December, 1931. The starting of the plant puts 400 men to work.